PBD-D50

RM-PBD1

SERVICE MANUAL

AEP Model
UK Model

Self Diagnosis Supported model

DVD VIDEO

DVD ROM

DOLBY DIGITAL

DVD-ROM Discman COMPACT disc

SPECIFICATIONS

System

System
Portable DVD Unit
Laser
Semiconductor laser
Signal format system
PAL colour system

Disc

Compatible discs
- DVD-ROM
- CD-ROM (mode-1 or mode-2 form 1)
- CD-R
- PHOTO CD (multisession)
- CD EXTRA (CD+)
- DVD VIDEO (PAL/NTSC)
- VIDEO CD (PAL/NTSC)
- AUDIO CD (CD-DA)

Note

Depending on the disc, optional software or the MPEG playing card is necessary for use.

Disc diameter
12 cm (4 3/4 inch), 8 cm (3 inch)

Drive performance

Data transfer rate
DVD-ROM: less than 1.352 MB/s
CD-ROM: less than 1.2 MB/s
(8× speed)
(with the AC power adapter)
less than 0.6 MB/s
(4× speed)
(with the battery pack)
These sustained rates are differ, depending on the PC.

Averaged access time (random access)
DVD-ROM: 300 ms
CD-ROM: 250 ms
Buffer memory capacity
1024 KB (DVD)
512 KB (CD)

Laser Diode Properties

DVD unit
Material
AlGaInP
Wavelength
650 nm
Emission Duration
Continuous
Laser Output
Less than 1000 µW
* This output is the value measured at a distance of 100 mm from the objective lens surface on the Optical Pick-up Block.
CD unit
Material
GaAlAs
Wavelength
780 nm
Emission Duration
Continuous
Laser Output
Less than 173 µW
* This output is the value measured at a distance of 100 mm from the objective lens surface on the Optical Pick-up Block.

Audio characteristics

Frequency response
DVD (PCM): 20 Hz to 44 kHz (+1.0 dB to –3.0 dB)
CD: 20 Hz to 20 kHz (+1.0 dB to –2.0 dB)
Signal-to-noise ratio (S/N)
More than 85 dB
High wave distortion rate
Less than 0.02 %
Dynamic range
More than 88 dB
Wow and flutter
Less than detected value (±0.001 % W PEAK)

Outputs

Jack name	Jack type	Maximum output levels	Load impedance
A/V OUT	Stereo mini jack	1 Vrms	Audio/Vrms 47 kilohms Video/Vpp 75 ohms terminated
PCM/ MPEG/ DOLBY DIGITAL	Optical output connector	–17 dBm	Wave length: 660 nm
S VIDEO OUT	4-pin mini DIN	Y: 1.0 Vp-p C: 0.286 Vp-p	75 ohms sync negative 75 ohms terminated
PHONES	Stereo mini jack	12 mV + 12 mV	16 ohms

— Continued on next page —

PORTABLE DVD-ROM DRIVE

SONY

9-928-104-31

General

Power requirements
- Power supply jack
  DC IN 10V jack accepts the AC-PBD1 AC power adapter (supplied), AC 220-240 V, 50/60 Hz
- Battery pack (not supplied)

Power consumption
AC 220-240 V, 50 Hz, 0.18 A (max, AC power adapter)
DC 10 V, 1.1 A (max, DVD VIDEO playback with the AC power adapter)
Dimensions (approx.)
149.6 × 33.5 × 182.3 mm
(6 × 1 3/8 × 7 1/4 inches) (w/h/d)
Mass (approx.)
570 g (1 lb 4 oz) (unit only)
Operating temperature
5°C to 35°C (–41°F to 95°F)
Operating humidity
5 % to 80 %
Environment
Temperature
–20°C to 55°C (–4°F to 131°F)
Humidity
15 % to 90 % Rh

SCSI PC card specifications

Operating temperature
5°C to 35°C (–41°F to 95°F)
Operating humidity
20 % to 80 % (no condensation)
Non-operating temperature
–20°C to 55°C (–4°F to 131°F)
Non-operating humidity
15 % to 90 % Rh (no condensation)
Acceptable interface
SCSI-2 based
MPC standard
MPC1, MPC2, MPC3 based
IC-PBD1 SCSI cable type PC card
Interface
PCMCIA 2.1 based
Card type
PCMCIA type II
Cable connected type
Half pitch pin type
50 pins
Cable length (approx.)
80 cm (31 1/2 inch)
DC current required
DC 5V about 80 mA
PC card dimensions (approx.)
54 × 85.6 × 5 mm
(2 1/4 × 3 3/8 × 7/32 inches) (w/h/d)
Mass (approx.)
28 g (1 oz)

Supplied accessories

- Audio/video cable
  (stereo mini plug × 1 ⟷ phono plug × 3) (1)
- AC-PBD1 AC power adapter (1)
- RM-PBD1 remote commander (remote) (1)
- VMC-91 Scart adapter (1)
- IC-PBD1 SCSI PC card (with cable) (1)
- Installing disc (3.5 inch floppy disk) (1)

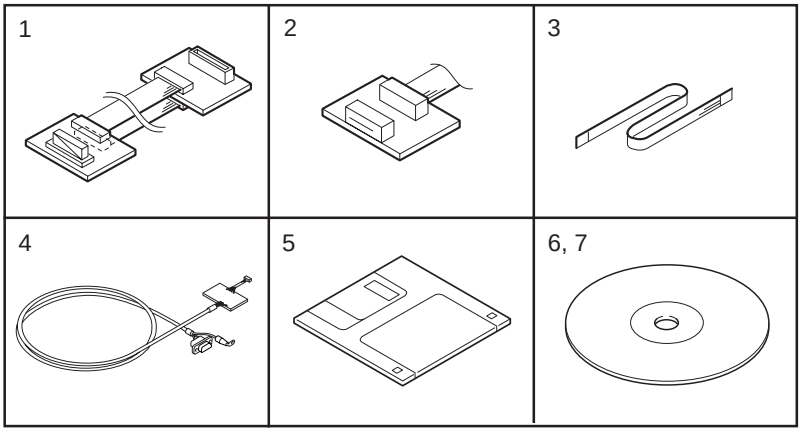
Optional accessories

- Battery pack
  NP-F750/F950
- AC battery changer
  AC-V700
- DC battery changer
  DC-V700
  DC-V515
- Optical digital cable
  POC-15B/15AB
- Headphones
  MDR-605LP

Design and specifications are subject to change without notice.

Service Tool List

Ref.No.	Name	Part Code	Usage
1	Extension cable 1	J-2500-129-1	Extension cable between the MAIN board CN453 and the SUB board CN454
2	Extension cable 2	J-2500-130-1	Extension cable between the MAIN board CN651 and the MD sled motor
3	FFC Extension cable	J-2500-131-1	Extension cable between the MAIN board CN652 and the MD spindle motor
4	Serial Extension cable	J-2500-132-1	RS-232C cable between the MAIN board CN802 PC (with conversion board)
5	Rewriting froppy disc	J-2500-133-1	Rewriting software
6	Test Disc (ROM)	8-797-401-80	The CPC ROM is also used here.
7	Test Disc (ROM)	8-797-402-00	The CPC ROM is also used here.



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

SERVICE NOTE ····· 4

1. GENERAL ····· 1-1

2. DISASSEMBLY
2-1. SUB BOARD ····· 2-1
2-2. DVD MECHANISM (DVDM-D50), MAIN BOARD ·· 2-1
2-3. UPPER LID ASSEMBLY ····· 2-2
2-4. OCONTROL FLEXIBLE BOARD ····· 2-2

3. BLOCK DIAGRAMS
3-1. OVERALL BLOCK DIAGRAM ····· 3-1
3-2. RF SERVO BLOCK DIAGRAM ····· 3-3
3-3. SCSI INTERFACE BLOCK DIAGRAM ····· 3-5
3-4. VIDEO/AUDIO BLOCK DIAGRAM ····· 3-7
3-5. SYSTEM CONTROL BLOCK DIAGRAM ····· 3-9
3-6. POWER BLOCK DIAGRAM ····· 3-11

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS
• MAIN PRINTED WIRING BOARD ····· 4-1
• MAIN (RF) SCHEMATIC DIAGRAM ····· 4-5
• MAIN (DECODER) SCHEMATIC DIAGRAM ····· 4-8
• MAIN (CD DSP) SCHEMATIC DIAGRAM ····· 4-11
• MAIN (SYSTEM CONTROL) SCHEMATIC DIAGRAM ····· 4-15
• MAIN (DVD DSP) SCHEMATIC DIAGRAM ····· 4-19
• MAIN (SCSI) SCHEMATIC DIAGRAM ····· 4-21
• MAIN (MOTOR DRIVER) SCHEMATIC DIAGRAM ····· 4-23
• MAIN (AV CONTROL) SCHEMATIC DIAGRAM ····· 4-26
• MAIN (CONNECTOR) SCHEMATIC DIAGRAM ····· 4-29
• MAIN (POWER SUPPLY) SCHEMATIC DIAGRAM ····· 4-31
• REMOTE PRINTED WIRING BOARD ····· 4-33
• REMOTE SCHEMATIC DIAGRAM ····· 4-34
• SUB PRINTED WIRING BOARD ····· 4-35
• SUB (MPEG DECODER) SCHEMATIC DIAGRAM ····· 4-37
• SUB (VIDEO D/A CONVERTER) SCHEMATIC DIAGRAM ····· 4-40
• SUB (CONNECTOR) SCHEMATIC DIAGRAM ···· 4-43

5. IC PIN FUNCTION DESCRIPTION
5-1. SYSTEM CONTROL MICON (MAIN BOARD IC801) ····· 5-1
5-2. A/V CONTROL MICON (MAIN BOARD IC901) ····· 5-3

6. SELF DIAGNOSIS FUNCTION ····· 6-1

7. ELECTRICAL ADJUSTMENT
7-1. CHARGE VOLTAGE ADJUSTMENT ····· 7-1
7-2. VIDEO ADJUSTMENT ····· 7-1

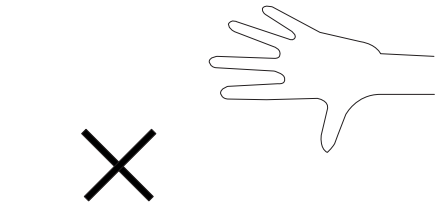
8. REPAIR PARTS LIST
8-1. EXPLODED VIEWS
8-1-1. LOWER CABINET SECTION ····· 8-1
8-1-2. UPPER CABINET SECTION ····· 8-2
8-2. ELECTRICAL PARTS LIST ····· 8-3

SERVICE NOTE

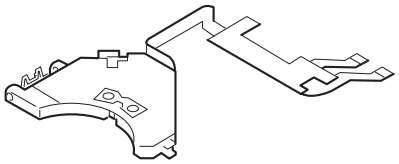
Do not unpack or install or repair the optical pickup unit KHS-190A series without the grounding processing as shown below.

1. Grounding the human body
   Be sure to wear a grounding wrist strap (10 Ω or less) around your wrist to ground the static electricity accumulated in human body.
2. Grounding the work bend
   Place a conductive sheet (10 Ω or less) or a copper plate on the work bench on which the merchandise to be repaired is placed. (The black sheet that is used for packaging the optical pickup unit, is a conductive sheet.) Connect the conductive sheet or the copper plate to an electrical ground.
3. Be careful that your clothes do not touch the optical pickup unit because the static electricity accumulated in your clothes are not grounded through the grounding wrist strap.
4. When the optical pickup unit is shipped from the factory, the laser diode pins are shorted to protect the laser diode from static electricity. To open the shorting, connect the laser diode to an appropriate APC (Automatic laser Power Control) circuit first, then remove the soldering quickly with a soldering iron having the insulation resistance of 1M or more.

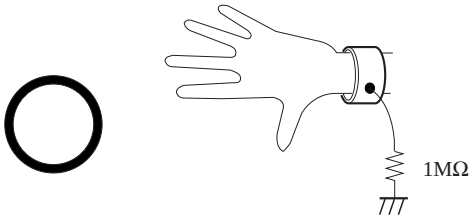
Optical pickup unit (KHS-190A/J1N)



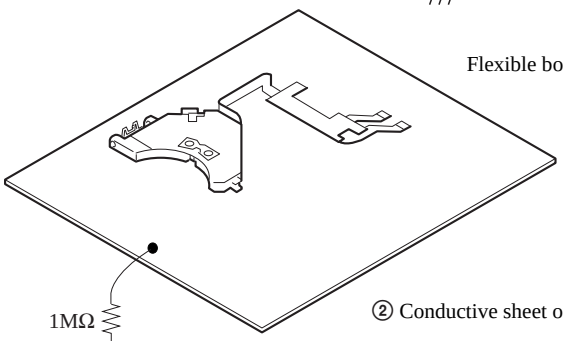
Optical pickup unit



① Grounding wrist strap

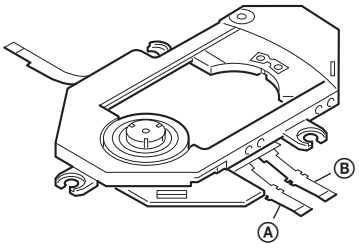


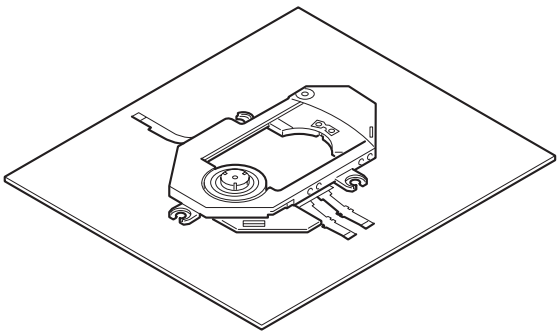
Flexible board



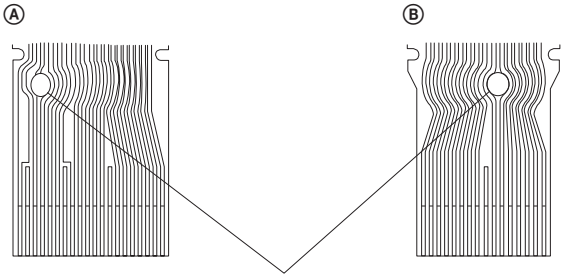
② Conductive sheet or copper plate

DVD mechanism (DVDM-D50)





Ⓐ Ⓑ



[Caution]
After installing the optical pickup unit, remove soldering.

This section is extracted from instruction manual.3-862-692-21

Table of contents

Self-diagnosis function 1-2
Index to parts and controls 1-3
Overview 1-5
This unit can play the following discs 1-6

Using as a DVD-ROM drive

Installing the software
① Checking the SCSI ID 1-9
② Connecting to the PC 1-9
③ Installing the driver 1-10
④ Checking if installation is complete 1-10 1-11
Using with MS-DOS 1-12
Operating a DVD-ROM drive 1-12

Using as a DVD player

Getting started
Hooking up the system 1-15
Necessary setup before using the unit 1-16

Basic operation
Playing a DVD VIDEO 1-17
Playing a CD/VIDEO CD 1-21

Additional operations
Playing repeatedly (Repeat Play) 1-25
Playing in random order (Shuffle Play) 1-27
Creating your own programme (Programme Play) 1-27
Resuming playback from the point where you stopped a disc (Resume Play) 1-29
Changing the sounds 1-30
Using the sub-titles 1-30
Changing the angles 1-31
Preventing accidental pressing of the buttons 1-32
Basic settings (INITIAL SETUP) 1-32
Limiting playback by children (Parental Control) 1-34
Using the audio amplifier 1-36

Additional Information

Using the rechargeable battery pack 1-38
Precautions 1-40
Notes on discs 1-41
Troubleshooting 1-41
Glossary 1-44
Language code list 1-45
INITIAL SETUP items list 1-46

WARNING

To prevent fire or shock hazard, do not expose the player to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

The socket outlet shall be installed near the equipment and shall be easily accessible.

The nameplate is located on the bottom.

CAUTION
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN.
DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
VORSICHT
SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET.
NICHT IN DEN STRAHL BLICKEN ODER MIT OPTISCHEN INSTRUMENTEN DIREKT ANSEHEN
ATTENTION
RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE.
NE PAS REGARDER DANS LE FAISCEAU NI À L'ŒIL NU NI À L'AIDE D'INSTRUMENTS D'OPTIQUE

This label is located on the bottom.

For customers in Germany

Directive: EMC Directive 89/336/EEC, 92/31/EEC
Low Voltage Directive 73/23/EEC, 93/68/EEC

This equipment complies with the EMC regulations when used under the following circumstances:

- Residential area
- Business district
- Light-industry district

(This equipment complies with the EMC standard regulations EN 55022 Class B.)

The supplied interference Audio/Video cable must be used with the equipment in order to comply with the limits for a digital device pursuant to EN 55022.

Welcome!

Thank you for purchasing the Sony Portable DVD-ROM Drive. Before operating the unit, please read this manual thoroughly and retain it for future reference.

Trademarks

- DVD-ROM Discman is a trademark of Sony Corporation.
- Adaptec is a registered trademark of Adaptec Inc.
- EZ-SCSI is a trademark of Adaptec Inc.
- Microsoft®, MS, MS-DOS®, and Windows® are registered trademarks of Microsoft Corporation.
- PC/AT is a registered trademark of International Business Machines Corporation.
- i486SX™ and Pentium are trademarks of Intel Corporation.
- Manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY, the double-D symbol ◻◻, "PRO LOGIC," and AC-3 are trademarks of Dolby Laboratories Licensing Corporation.

All other trademarks and registered trademarks are trademarks or registered trademarks of their respective owners.

The latest information about this unit is in the "Readme.txt" on the supplied floppy disk.

Self-diagnosis function

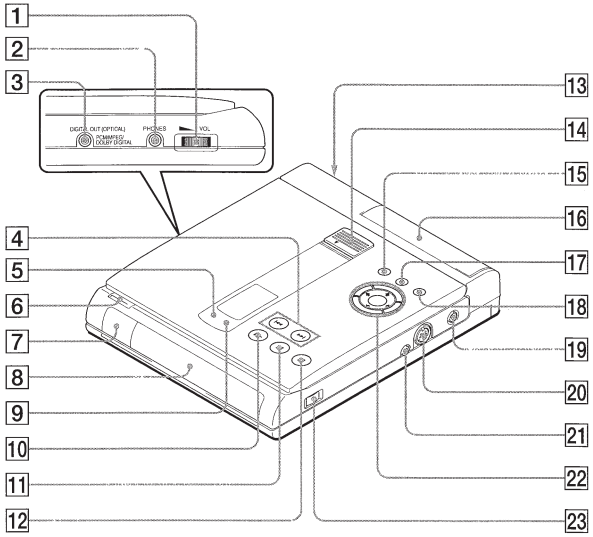
This function displays the unit's condition with three or five digits (a combination of the alphabet and numbers) on the TV screen or in the front panel display. If this occurs, check the following code chart.

Code number	Means	Do
C01	The battery pack is fully consumed.	Connect the AC power adapter to recharge.
C05	The AC power adapter has a problem.	Connect the supplied AC power adapter firmly. If the code number is still displayed, see page 81.
C13	The disc is dirty.	Clean the disc with a soft cloth (page 77).
EXXXX (XXXX are optional numbers.)	To prevent a malfunction, the self-decision function is working.	Please contact your Sony dealer and present the five digits number displayed. Example: E0002

Index to parts and controls

Refer to the pages indicated in parentheses for details.

Front and side panel



1 **VOL (volume) dial (38)**
Adjusts the volume.

2 **PHONES jack (38)**
Used when connecting headphones.

3 **PCM/MPEG/DOLBY DIGITAL connector (69, 70)**
Connects to an audio component using the optical digital cable.

4 **⏮/⏭ (previous/next) buttons (31, 39)**
Go back/forward to the previous/next chapter or track, or to search.

5 **POWER indicator (29, 37)**
Lights up in green when turning on the power.

6 **OPEN button (29, 37)**
Opens the disc cover. The unit does not work without connecting the AC power adapter or battery pack.

7 **(remote sensor) (27)**
Accepts the remote control signals.

8 **Front panel display (36, 44)**
Indicates the playing time, etc.

9 **BUSY indicator**
Lights up in orange while loading the data of the DVD-ROM.

10 **▷ (play) button (30, 38)**
Plays back a disc.

11 **⏸ (pause) button (31, 39)**
Pauses playing back a disc.

12 **□ (stop) button (30, 38, 53)**
Stops playing back a disc.

13 **SCSI connector (half pitch pin type 50 pins)**
Connects the supplied SCSI PC card when using this unit as the DVD-ROM drive.

14 **HOLD switch (59)**
Prevents accidental pressing of the buttons.

15 **DVD MENU button (34)**
Displays the DVD menu on the TV screen to set or adjust the menu items.

16 **Battery pack connector (72)**
Connects the optional battery pack.

17 **TITLE button (33)**
Displays the title menu on the TV screen.

18 **RETURN button (41, 64)**
Returns to the preceding selection screen, etc.

19 **DC IN 10V jack (26)**
Connects the AC power adapter (supplied).

20 **S VIDEO OUT connector (25)**
Connects to the S video input connector on the TV.

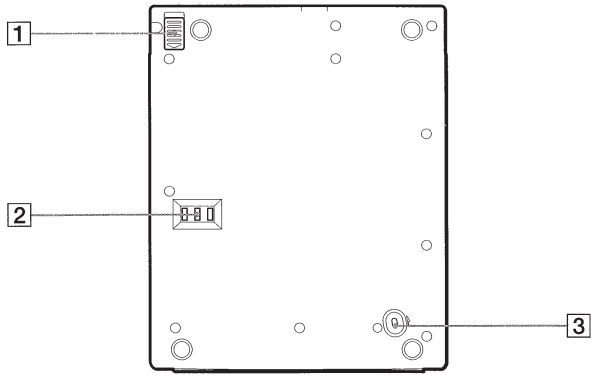
21 **A/V OUT connector (25, 68)**
Connects to the audio/video input connectors on the TV or amplifier.

22 **←/↑/↓/→/ENTER buttons**
Select the items or settings.

23 **POWER button (29, 37)**
Turns the power on and off the unit.

(continued)

Rear Panel

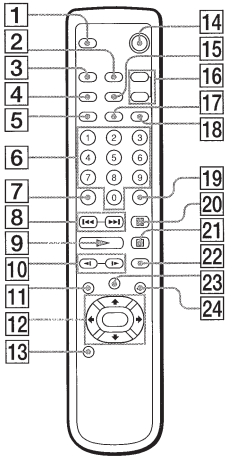


1 **BATT RELEASE switch (74)**
Removes the battery pack.

2 **DIP switch**
Sets up the SCSI ID to prevent mixing the SCSI ID with other optional SCSI units connected with your PC when using this unit as the DVD-ROM drive.

3 **MANUAL LID RELEASE switch (84)**
Opens the disc cover forcibly when the AC power adapter or the battery pack are disconnected.

Remote



1 **DISPLAY button (35, 43)**
Displays the current playing status on the TV screen.

2 **AUDIO button (55)**
Changes the sound while playing a DVD VIDEO, VIDEO CD, or an audio CD.

3 **ANGLE button (58)**
Changes the angles when playing a DVD VIDEO.

4 **REPEAT button (45, 46, 47)**
Repeats playback.

5 **A–B button (48)**
Repeats a specific portion.

6 **Number buttons**
Select the items or settings.

7 **CLEAR button**
Cancels the selected item.

8 **I◄◄ PREV/►►I NEXT buttons (31, 39)**
Go back/forward to the previous/next chapter or track, or to search.

9 **▷ PLAY button (30, 38)**
Plays back a disc.

10 **◄I /I► SLOW buttons (31, 39)**
Play a disc in slow motion.

11 **DVD MENU button (34)**
Displays the DVD menu on the TV screen to set or adjust the menu items.

(continued)

12 **←/↑/↓/→/ENTER buttons**
Select the items or settings.

13 **SETUP button (60, 64)**
Sets the INITIAL SETUP.

14 **POWER button (29, 37)**
Turns the power on and off the unit.

15 **PROGRAM button (50)**
Plays a disc in Programme Play.

16 **SUB-TITLE, (SUB-TITLE) ON/OFF buttons (56)**
Turn the sub-titles on and off, and change the sub-title when playing a DVD VIDEO.

17 **SHUFFLE button (49)**
Plays a disc in Shuffle Play.

18 **RESUME button (53)**
Plays a disc in Resume Play.

19 **ENTER button (31, 39, 50, 64)**
Executes the items or settings.

20 **⏸ PAUSE button (31, 39)**
Pauses playing back a disc.

21 **□ STOP button (30, 38, 53)**
Stops playing back a disc.

22 **SEARCH MODE button (31, 39)**
Sets the unit in search mode (track, index, etc.)

23 **TITLE button (33)**
Displays the title menu on the TV screen.

24 **↩ RETURN button (41, 64)**
Returns to the preceding selection screen, etc.

Overview

■ Using as the portable DVD-ROM drive

You can use this unit as a DVD-ROM drive using with the supplied SCSI PC card.

You can use this unit without the AC power adapter while using the optional battery pack.

- Complete the set up uisng "Installing the software" (pages 13 to 19).
- For basic operations, see "Operating a DVD-ROM drive" (pages 20 to 24).

System requirements

You can connect this unit using the PC connecting kit to a PC as follows:

- IBM PC/AT compatible personal computer
- CPU: i486SX 33MHz or higher (Pentium processor or higher recommended)
- PC card slot: Type II × 1 slot
- Main memory: more than 16MB (32MB or higher recommended)
- Data capacity space on the hard disc: more than 10 MB
- A 3.5 inch or higher density floppy disk drive
- OS: Microsoft Windows 95[1], Windows 95 (OSR 2)[2]

[1] Using a lower version of Windows 95 other than OSR2 limits the capabilities of use as a DVD-ROM drive. For the details, see page 19.

[2] This unit is not compatible with Windows 3.1 or Windows NT or a Macintosh system.

When using a desk top type PC, a SCSI board is required. (The Adeptec AHA-2940AU SCSI board is recommended. Other SCSI boards compatibility is not guaranteed.)

Please contact to the dealer or sales agency of the SCSI boad.

■ Using as the portable DVD player

You can play a DVD VIDEO, VIDEO CD, or audio CD. In addition, you can enjoy powerful sound when connected to a digital component with a built-in Dolby Digital decoder when playing DVD VIDEOs with sound recorded in Dolby Digital (AC-3) format.

When using the optional battery pack, you can play back without the AC power adapter.

- Complete the set up uisng "Getting started" (pages 25 to 28).
- For basic operations, see "Playing a DVD VIDEO" (pages 29 to 36) and "Playing a CD/VIDEO CD" (pages 37 to 44).
- For additional features, see pages 45 to 69.
- The icons shown below are used in this manual:

Icon	Meaning
	Indicates that you can use only the remote to do the task.
DVD	Indicates the functions for DVD VIDEOs.
VIDEO CD	Indicates the functions for VIDEO CDs.
CD	Indicates the functions for AUDIO CDs.

Unpacking

Check to make sure you have received the following items.

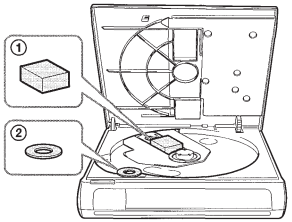
- Audio/video cable (stereo mini plug × 1 ⟷ phono plug × 3) (1)
- AC-PBD1 AC power adapter (1)
- RM-PBD1 remote commander (remote) (1)
- VMC-91 Scart adapter (1)
- IC-PBD1 SCSI PC card (with cable) (1)
- Installing disc (3.5 inch floppy disk) (1)

CAUTION

Before using this unit, be sure to remove the packing materials (① and ②) from inside the front cover.

① Black, square shaped cushion near the lens.

② Black ring near the OPEN button.



If you turn on the unit without removing these materials, it may cause a malfunction.

This unit can play the following discs

	This unit only	With PC[1]
DVD-ROMs	×	○
CD-ROMs	×	○
CD-Rs	○[2]	○
PHOTO CDs	×	○
CD EXTRAs (CD +)	○[3]	○
DVD VIDEOs	○	×
VIDEO CDs	○	○
AUDIO CDs (CD-DA)	○	○

[1] Depending on the disc, optional software or an MPEG playing card may be required for playback.
[2] Depending on the CD-R, playback may not be possible.
[3] You can play back the audio part only.

You cannot play the discs below:

- DVD-RAM
- DVD-R
- DVD+RW
- CD-RW

You can play a disc recorded in PAL or NTSC colour system. See page 28.

Notes on DVD VIDEO discs

Region code of DVD VIDEOs you can play

Region code indications such as are labelled on some DVD VIDEOs to indicate which type of unit can play the discs.
Unless "2" is included in the indications or is labelled on the DVD VIDEOs, you cannot play the discs on this unit. If you try to play these DVD VIDEOs, the message "PLAYING THIS DISC PROHIBITED BY AREA LIMITS" will appear on the TV screen.

Depending on the DVD VIDEO, no region code indications may be provided, even though playing the DVD VIDEO is prohibited by the area limits.

Note on playback operations of DVD VIDEOs and VIDEO CDs
Some playback operations of DVD VIDEOs and VIDEO CDs may be intentionally fixed by software producers. Since this unit plays DVD VIDEOs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVD VIDEOs or VIDEO CDs.

Logo marks of DVD VIDEOs

Logo marks on DVD VIDEO discs or cases are shown as below. These marks show available contents or functions.
Some DVD VIDEOs do not have these marks even though you may be able to use these functions.
For more details of the marks, refer to the instruction of the DVD VIDEO disc.

Logo	Meaning
	The number of audio tracks
	The number of sub-titles
	The number of angles
	The picture aspect ratio
	Region code

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorised by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorised by Macrovision Corporation. Reverse engineering of disassembly is prohibited.

Notes on VIDEO CDs with PBC (Playback Control) functions

This unit conforms to Ver. 1.1 and Ver. 2.0 of VIDEO CD standards. You can enjoy two kinds of playback according to the disc type.

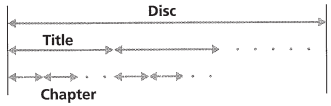
Disc type	You can
VIDEO CDs without PBC functions (Ver. 1.1 discs)	Enjoy video playback (moving pictures) as well as music.
VIDEO CDs with PBC functions (Ver. 2.0 discs)	Play interactive software using menu screens displayed on the TV screen (PBC Playback), in addition to the video playback functions of Ver 1.1 discs. Moreover, you can play high-resolution still pictures, if they are included on the disc.

Terms for discs

- **Title**
  The longest sections of a picture or a music piece on a DVD VIDEO; a movie, etc. for a picture piece on a video software or an album, etc. for a music piece on an audio software. Each title is assigned a title number enabling you to locate the title you want.

- **Chapter**
  Sections of a picture or a music piece that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want. Depending on the disc, no chapters may be recorded.

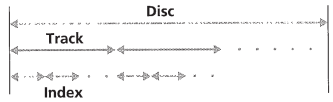
DVD VIDEO structure



- **Track**
  Sections of a picture or a music piece on a VIDEO CD or a CD. Each track is assigned a track number enabling you to locate the track you want.

- **Index**
  A number that divides a track into some sections to easily locate the point you want on a VIDEO CD or a CD. Depending on the disc, no index may be recorded.

VIDEO CD or CD structure



- **Scene**
  On a VIDEO CD with PBC functions, the menu screens, moving pictures, and still pictures are divided into sections called "scenes." Each scene is assigned a scene number enabling you to locate the scene you want.

Installing the software

You can use this unit as a DVD-ROM drive with SCSI PC card. You can play back not only a DVD-ROM, but also a CD-ROM and a CD-R.

When you use this unit as a DVD-ROM drive, the buttons (other than the POWER button and the OPEN button on the unit) do not work on either the unit or the remote.

Follow the instructions below to use this unit with your PC.

1 Checking the SCSI ID (page 14)

Check the SCSI ID number of this unit.

2 Connecting to the PC (page 15)

Use the SCSI PC card supplied with this unit for the connection of your PC.

3 Installing the driver (page 16)

Connect this unit with your PC, then install the necessary software.

4 Checking if installation is complete (page 18)

Check that your PC can read from this unit.

To set the SCSI terminator

It is not necessary to set the SCSI terminator because the SCSI terminator of this unit is always "ON."

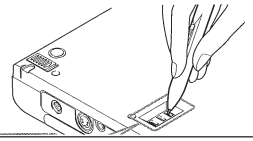
① Checking the SCSI ID

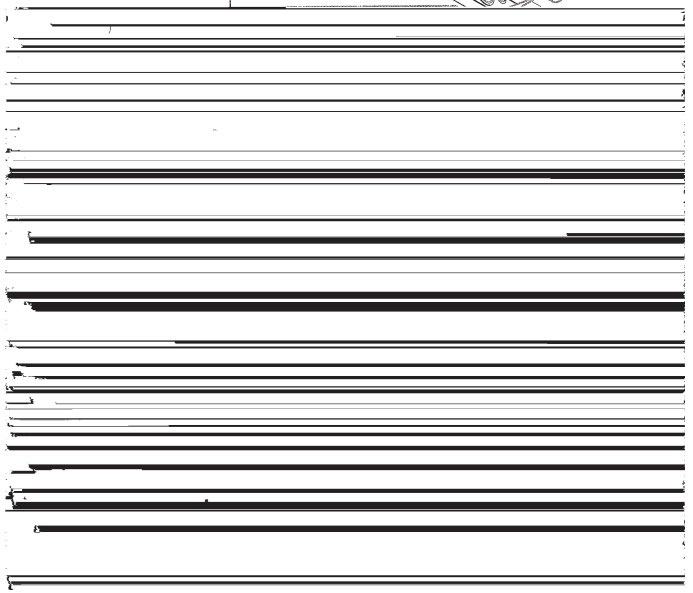
Before connecting to your PC, it is necessary to set the SCSI ID using the DIP switch on the rear panel of the unit to prevent an overlap with the other units connected to your PC.

Change the default setting using a pointed object such as the tip of a ballpoint pen.

If your PC is connected to one or more other units using SCSI ID numbers, you cannot use the same SCSI ID number for more than one unit.

The default number of the SCSI ID of this unit is "3."



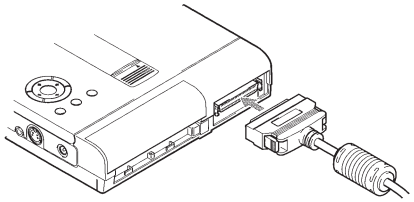


Note
Do not pull on the plug of the interface firmly. It may cause a malfunction.

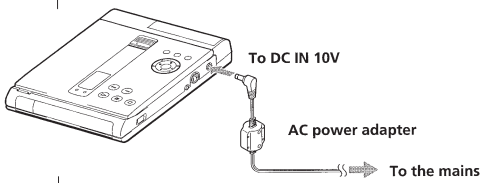
② Connecting to the PC

Before installing, follow the steps below to connect the SCSI PC card (supplied).

1 Insert the plug of the SCSI PC card into the SCSI connector.



2 Connect the AC power adapter to the unit and the wall outlet.



③ Installing the driver

Install the SCSI Miniport Driver and the DVD Driver after connecting this unit with your PC. There are two ways of installing the SCSI Miniport Driver; the standard installation and the manual installation. The following steps explain the standard installation. For more details on the manual installation, refer to the "Readme.txt" file in the supplied floppy disk.

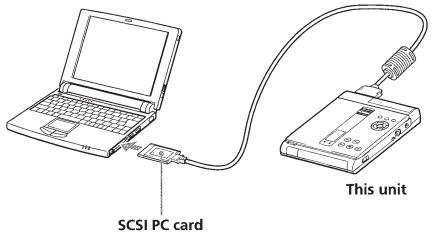
Installing the SCSI Miniport Driver

1 Before inserting the SCSI PC card into your PC, press POWER on this unit to turn the power on.

Remove the disc, if inserted into the drive.

2 Turn on the power of your PC.

3 After checking that the SCSI PC card and the unit are connected correctry, then insert the SCSI PC card into the PC card slot of your PC.



After the "New Hardware Found" window appears, the driver is installed automatically. Go to "Installing the DVD driver" (page 17).

If the "Insert a disk" window appears after "New Hardware Found" window appears

1 Insert the supplied install disk into the floppy disk drive of your PC, then click "OK."
2 Type "A:\WIN95\WIN95_AT" in "Copy from:," then click "OK."
3 Follow the instructions on the screen to continue installation.
4 When installation finishes, remove the install disk, then restart your PC.

If the "New Hardware" does not appear

The PC card device driver on your PC does not work or the PC card device is not set to use the 32 bit support.

1 Double click the "PC card (PCMCIA)" icon on the Control Panel.
"PC card (PCMCIA) wizard" appears.
2 Follow the instructions on the screen.
3 When it finishes, restart your PC, then follow the instructions of "Installing the SCSI Miniport Driver."

Installing the DVD driver

Note
Make sure to restart your PC after installing. If not, this unit may not work as the DVD-ROM drive.

1 Click "Start," then set the pointer to "Settings" and click "Control Panel."

2 Double click "Add/Remove Program Properties," then click "Setup."

The "Install Program From Floppy Disk or CD-ROM" window appears.

3 Insert the supplied install disk into the floppy disk drive of your PC, then click "Next."

4 Enter "A:\DVD\Setup.exe" on "Command line for installation program:," then click "Finish."

5 Follow the instructions on the screen to continue installation.

6 When installation finishes, remove the install disk, then restart your PC.

Reinstalling the ASPI manager

Note
Make sure to restart your PC after installing. If not, this unit may not work as the DVD-ROM drive.

For smooth operation when using this unit with other SCSI units are also connected, reinstalling the ASPI manager is highly recommended.

1 Follow Steps 1 to 3 in "Installing the DVD driver."

2 Enter "A:\WIN95\Setup32.exe" on "Command line for installation program:," then click "Finish."

3 Follow the instructions on the screen to continue installation.

4 When installation is complete, remove the install disk, then restart your PC.

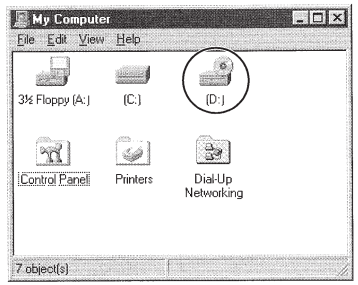
Go to "④ Checking if installation is complete."

④ Checking if installation is complete

Double-click the "My Computer" icon.

When the icon shown below appears, you can use this unit.

When using a CD-ROM drive, more than one icon appears.



If the icon shown above does not appear, see "Troubleshooting."

Note
Make sure to restart your PC after installing. If not, this unit may not work as the DVD-ROM drive.

Using with MS-DOS

The DOS prompt of Windows 95 can read this unit, but you cannot use this unit with MS-DOS as the DVD-ROM drive. (However, you can use MS-DOS for the CD-ROM drive.)

When using a unit with MS-DOS or reinstalling Windows 95 from this unit, you need to install the driver separately. To install the CD-ROM drive software, PCMCIA Release2.1 or higher is required.

Make sure your PC is installed with either Card Service or Socket Service before installing the driver into MS-DOS. Refer to the instructions of your PC for more details.

1 Before inserting the SCSI PC card into your PC, press POWER on this unit to turn the power on.

Remove the disc, if inserted into the drive.

2 After checking that the SCSI PC card is connected to this unit correctly, insert the SCSI PC card into the PC card slot of your PC.

3 Insert the supplied install disk into the floppy disk drive of your PC.

4 Enter keys as below on the DOS command line to change the DOS directory to the floppy drive.

a: ⏎

5 Enter keys as below on the DOS command line.

cd dos ⏎

dosinst ⏎

6 Follow the instructions on the screen to continue installation.

7 When installation finishes, restart your PC.

When using the PC installed with IBM Card Service or Socket Service

Refer to "Readme.txt" of the supplied floppy disk.

Operating a DVD-ROM drive

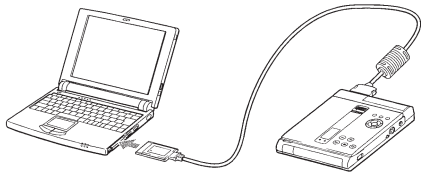
Notes

- Make sure to turn on this unit before connecting to your PC. If not, Windows 95 cannot read the connection with this unit.
- When using a game or some CD-ROM or DVD-ROM software with sound, a sound system is necessary on your PC.
- Depending on the CD-ROM and DVD-ROM, you can listen to the sound or music through the headphones jack on this unit.
- Do not turn off this unit while your PC is scanning the unit. If you turn off the unit accidentally, the PC may not operate. Restart the PC.
- When this unit is idle for more than 5 minutes when connected to a PC, the disc will stop rotating due to the power saving function.

Make sure, following the operations below, to connect with other equipment and to turn the power on. If you turn the power on in the wrong order, you can not use the DVD-ROM drive.

1 Turn on this unit.

2 After checking that the SCSI PC card is connected to this unit correctly, insert the SCSI PC card into the PC card slot of your PC.



3 Turn on your PC.

If your PC has already been turned on, you don't have to restart.

Note
If the disc is not inserted correctly, it may cause a malfunction.

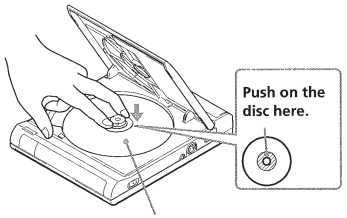
Inserting the disc

1 Press OPEN to open the disc cover.

2 Insert a disc.

When inserting a disc, please take note of the following.

- Insert the disc in a horizontal position.
- Push down gently with two fingers.
- Make sure the disc clicks into the position.



3 Close the disc cover.

Now your PC is ready to read data on the DVD-ROM. When you start reading data on the DVD-ROM, the BUSY indicator on the unit lights up orange.

Notes

- Make sure the disc has completely stopped rotating before removing the disc.
- Do not open the disc cover using the OPEN button while the BUSY indicator is lit. If you do, your PC may not work correctly. In this case, reset and restart your PC.
- When you remove the disc, close the application software first.
- If the OPEN button does not work, slide the MANUAL LID RELEASE switch in the direction of the arrow to open the disc cover. Then restart this unit and your PC.

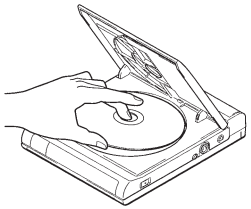
Removing the disc

Do not turn the power off while removing the disc.

1 Press OPEN to open the disc cover.

2 Remove the disc.

To remove the disc, gently hold the centre of the turntable down with your finger and pull up from the edge of the disc.



To access to the area over 4 GB

The data capacity of a single-layer and single-sided DVD disc is up to 4.7 GB, a dual-layer and double-sided DVD disc has up to 8.5 GB.

After installing the driver using the supplied install disk, Windows 95 can read the DVD-ROM disc. However, depending on the version of Windows 95, any files containing over 4 GB may not be able to be read due to the limitation of the OS file system.

To check the version of your Windows 95, using the mouse button on the right, click the "My Computer" icon, then click "Properties" on the Shortcut menu.

If the following version number of Windows 95 appears;

"4.00.950" or "4.00.950a"

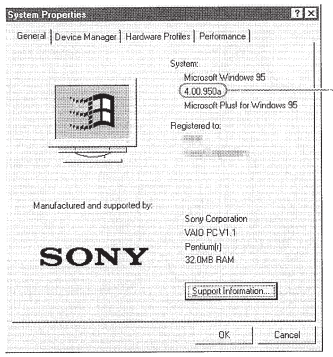
the file contained over 4 GB can not be read. That means the maximum data capacity of a single-layer and single-sided DVD-ROM disc or dual-layer and double-sided DVD-ROM disc may not be able to be read and operating the programme may cause a malfunction.

If the following version number of Windows 95 appears;

"4.00.950 B"

you can access all of the DVD disc. The display shown above called "OSR2 (OEM Service Release 2)," is a version of Windows 95 pre-installed.

The data capacity of the DVD disc displayed on the explorer may not be the exact number. This is caused by the limitation of the explorer function and this is not a malfunction even if a smaller number of the data capacity of the DVD disc than the exact number is displayed.



The version number of Windows 95

Note

If you disconnect the PC card while the PC is working, an accidental malfunction may occur.

When you are finished using this unit as the DVD-ROM drive

1 Exit and close the application software of the DVD-ROM drive.

2 Click the PC card icon on the right of the taskbar.

The Short Cut menu appears.

3 Click "Adaptec APA-1425/50/60 PCMCIA SCSI Host Adapter."

The "You may safely remove this device" message appears.

4 Click "OK."

Now you can remove the SCSI PC card from your PC.

To stop using this unit while connected to your PC by the SCSI PC card.

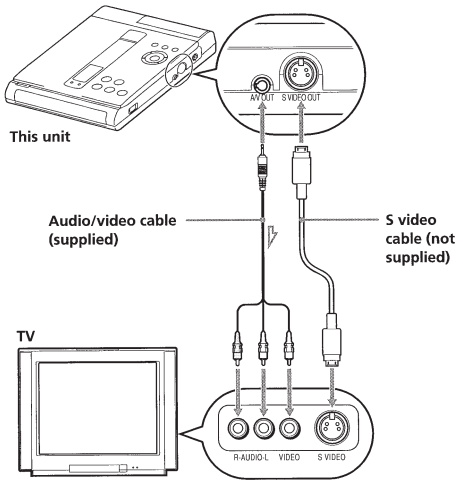
Turn off your PC, then turn off this unit.

Hooking up the system

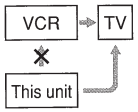
This section describes how to hook up the unit to a TV (with audio/video input connectors) and/or an amplifier. You cannot connect this unit to a TV without a video input connector. **Be sure to turn off the power of each component before making the connections.**

1 Hookups

When connecting the cord, be sure to match the colour-coded cord to the appropriate connectors on the components: Yellow (video) to Yellow, Red (right) to Red, and White (left) to White. Be sure to make connections firmly to avoid hum and noise.

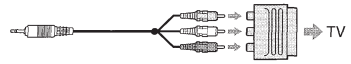


Note
Do not connect this unit to a VCR. If you view the pictures on your TV after making connections shown below, picture noise may appear.



If your TV has a EURO AV (SCART) connector

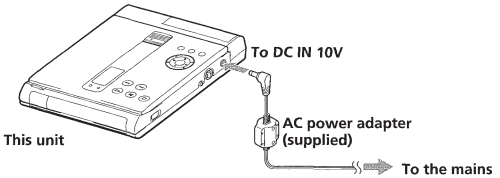
Use the supplied Scart adapter.



If your TV has an S video input connector

Connect the component via the S VIDEO OUT connector using the S video cable (not supplied) instead of the video connecting cord. You will get a better picture.

2 Connecting the AC power adapter



You can attach the optional battery pack.
See "Using the rechargeable battery pack" (page 71).

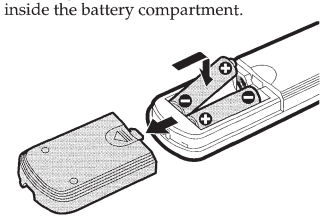
When to replace batteries
With normal use, the batteries should last for about six months. When the remote no longer operates the unit, replace all the batteries with new ones.

1 Connect the supplied AC power adapter to this player and the mains.

2 Press POWER.
The POWER indicator lights up green.

Inserting batteries into the remote

You can control the unit using the supplied remote. Insert two R6 (size AA) batteries (not supplied) by matching the + and – ends on the batteries to those inside the battery compartment.



Notes

- If you do not use batteries correctly, it may cause damage from leakage and corrosion. Please follow the directions below:
  - Make sure the polarity is correct.
  - Do not use a new battery with an old one or mix different types of batteries.
  - Do not charge a dry cell battery.
  - If you will not use the remote for an extended period of time, remove the batteries.
  - If you have battery leakage, replace with new batteries after cleaning the battery case.
- Do not expose the remote sensor to direct sunlight or other lighting apparatuses. Doing so may cause a malfunction.

Necessary setup before using the unit

Some initial setups are necessary for the unit depending on the TV or other components to be connected.

For details on using the menu, see page 60.

For details on each menu item, see pages 61 to 63.

Note

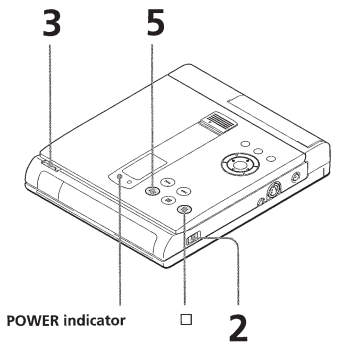
This unit conforms to the PAL colour system. When you play a disc recorded in the NTSC colour system, the unit outputs the video signal in the PAL colour system.

- **To connect the unit to a normal TV**
  Set "TV TYPE" in "INITIAL SETUP" to "4:3 (PANSCAN)" or "4:3 (LETTERBOX)."
- **To connect the unit to a wide-screen TV**
  Set "TV TYPE" in "INITIAL SETUP" to "16:9."
- **To connect the player to a digital component with a built-in Dolby Digital decoder**
  Set "DIGITAL OUT" in "INITIAL SETUP" to "DOLBY DIGITAL."
- **To listen to the sound through speakers connected to an amplifier with a digital connector, or to output the sound to a digital component such as a DAT or MD deck**
  Set "DIGITAL OUT" in "INITIAL SETUP" to "D-PCM."

"INITIAL SETUP" also includes other items such as "DVD MENU," "PARENTAL CONTROL," etc. For details, see page 60.

For basic operations such as using the unit, see "Playing a DVD VIDEO" (page 29) and "Playing a CD/VIDEO CD" (page 37). For additional features, see from page 45.

Playing a DVD VIDEO



When using the battery pack

Normally you cannot use the remote to turn on the unit. However, within 5 minutes after having used the battery pack, you can use the remote to turn on the unit.

1 Make the appropriate settings on your TV.
Turn on the TV and select the video input so that you can view the pictures from this unit.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this unit.

2 Press POWER to turn on the unit.

The POWER indicator lights up green and the front panel display lights up.

When using the battery pack, the front panel display doesn't light up.

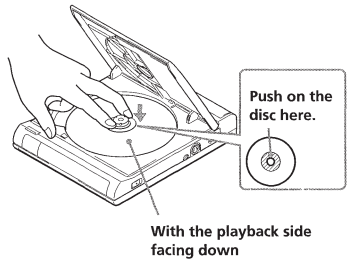
3 Press OPEN to open the disc cover.

(continued)

4 Insert a DVD VIDEO disc.

When inserting a disc, please take note of the following.

- Insert the disc in a horizontal position.
- Push down gently with two fingers.
- Make sure the disc clicks into the position.



5 Close the disc cover, then press ▷.

The player starts playback (Continuous Play). Adjust the volume on the TV or the amplifier.

After doing Step 5

A DVD menu or title menu may appear on the TV screen (see page 33 or 34).

To stop playback

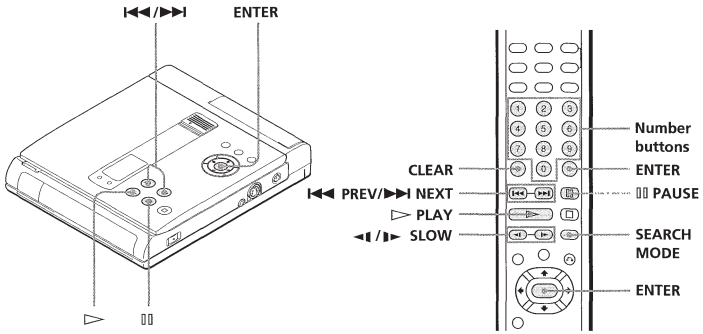
Press □.

Notes

- If the disc is not inserted correctly, it may cause a malfunction.
- The power is automatically turned off whenever,
  - a disc is not being played.
  - you do not operate the unit or the remote for more than 30 minutes when using the AC power adapter (10 minutes when using the optional battery pack).
- When using as the DVD-ROM drive, the Auto Power Off function does not work.

Refer to the instructions supplied with your disc.

Various modes of playback



What are title and chapter?
See page 12.

Each time you press SEARCH MODE
"TITLE SEARCH" and "CHAPTER SEARCH" appear on the TV screen.

Note
Depending on the DVD VIDEO, you may not be able to do some of the operations described on the right.

To	Press
Pause	▯▯
Resume playback after pause	▯▯ or ▻
Play in slow motion	◄▮ SLOW or ▮► SLOW. To return to Continuous Play mode, press ▻.
Go/back to the next/ preceding chapter in Continuous Play mode	I◄◄ / ►►I
Select the chapter	**1** SEARCH MODE repeatedly until "CHAPTER SEARCH" appears on the TV screen. **2** The number buttons to select the chapter number, then ENTER.
Select the title	**1** SEARCH MODE repeatedly until "TITLE SEARCH" appears on the TV screen. **2** The number buttons to select the title number, then ENTER.

(continued)

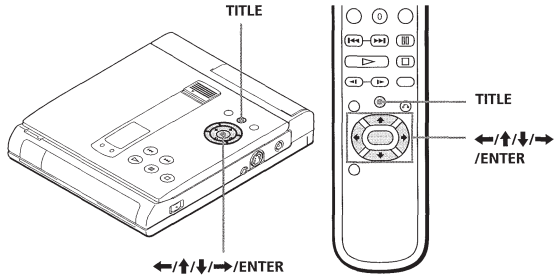
To	Press
Quickly locate a point while monitoring the picture (Search)	I◄◄ / ►►I and hold down until you find the point. (There is no sound during Search mode.)

If you enter the wrong number

Press CLEAR, then the correct number button.

Using the title menu

On a DVD VIDEO, long sections of movies or music pieces are divided into smaller segments. Each of these segments is called "title." When you play a DVD VIDEO which contains several titles, you can select the title you want using the title menu.



Notes

- Depending on the DVD VIDEO, you may not be able to select the title.
- Depending on the DVD VIDEO, the instructions supplied with the disc may refer to "title menu" as simply "menu" or "title ." Linkwise, "Press ENTER." in Step 3 may be expressed as "Press SELECT."

1 Press TITLE.

The title menu appears on the TV screen. The contents of the menu vary from disc to disc.

2 Press ←/↑/↓/→ to select the title you want to play.

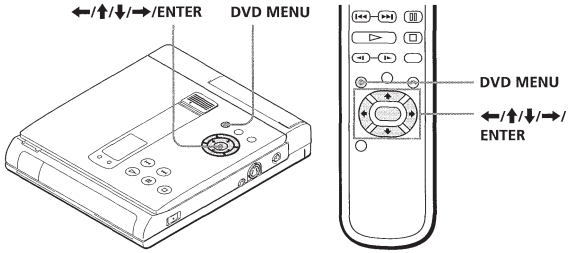
(Depending on the DVD VIDEO, you may be able to use the number buttons to select the title.)

3 Press ENTER.

The unit starts playing the selected title.

Using the DVD menu

Some DVD VIDEOs allow you to select the disc contents using the menu. When you play these DVD VIDEOs, you can select the item, the language for the sub-titles, the language for the sound, etc., using the DVD menu.



If you want to select the language for the DVD menu

Change the setting using "INITIAL SETUP" (see page 60).

Notes

- Depending on the DVD VIDEO, the instructions supplied with the disc may refer to "DVD menu" as simply "menu." Likewise, "Press ENTER." in Step 3 may be expressed as "Press SELECT."
- Depending on the DVD VIDEO, the DVD menu may not appear on the TV screen.

1 Press DVD MENU.

The DVD menu appears on the TV screen. The contents of the menu vary from disc to disc.

2 Press ←/↑/↓/→ to select the item you want to change.

(Depending on the DVD VIDEO, you may be able to use the number buttons to select the item.)

3 Press ENTER.

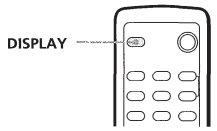
What is angle?
See page 58.

What is language for the sound and sub-titles?
See pages 61 and 62.

Note
Depending on the DVD VIDEO, some information may not appear on the TV screen.

Using the on-screen display

You can check the operating status of the unit and information about the disc using the on-screen display on the TV screen.

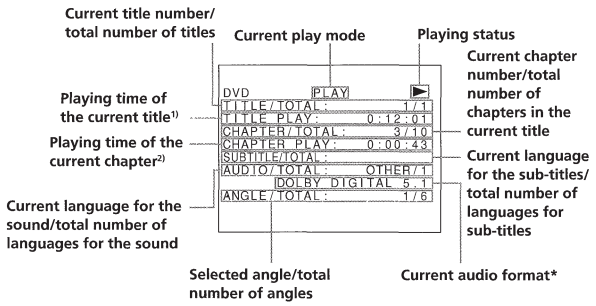


Press DISPLAY.

Each time you press the button, the on-screen display changes as follows:

On-screen display 1
↓
On-screen display 2
↓
On-screen display off
↩

■ Display information of the on-screen display 1 (2) mode


Current title number/ total number of titles
Current play mode
Playing status
Current chapter number/total number of chapters in the current title
Playing time of the current title1)
Playing time of the current chapter2)
Current language for the sound/total number of languages for the sound
Current language for the sub-titles/ total number of languages for sub-titles
Selected angle/total number of angles
Current audio format*
DVD
PLAY
TITLE/TOTAL : 1/1
TITLE PLAY : 0:12:01
CHAPTER/TOTAL : 3/10
CHAPTER PLAY : 0:00:43
SUBTITLE/TOTAL :
AUDIO/TOTAL : OTHER/1
DOLBY DIGITAL 5.1
ANGLE/TOTAL : 1/6

* "PCM," "MPEG," or "DOLBY DIGITAL" is displayed. In "DOLBY DIGITAL" case, the channel in the playing track is displayed.

(continued)

1) **The contents of the display change according to the on-screen display setting:**
- When "On-screen display 1" is selected, the playing time of the current title is displayed.
- When "On-screen display 2" is selected, the remaining time of the current title is displayed.

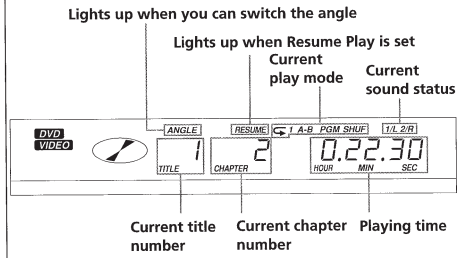
2) **The contents of the display change according to the on-screen display setting:**
- When "On-screen display 1" is selected, the playing time of the current chapter is displayed.
- When "On-screen display 2" is selected, the remaining time of the current chapter is displayed.

■ Display information of the on-screen display off mode

No information concerning on-screen display is displayed. (Other messages, etc., will be displayed.)

Using the front panel display

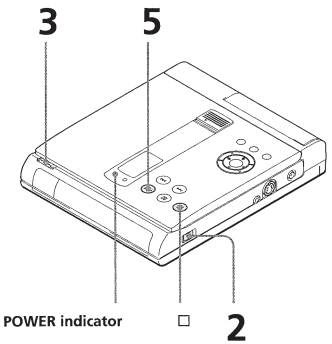
■ Display information while playing a disc



Playing a CD/VIDEO CD

When using the battery pack

Normally you cannot use the remote to turn on the unit. However, within 5 minutes after having used the battery pack, you can use the remote to turn on the unit.



1 Make the appropriate settings on your TV.
Turn on the TV and select the video input so that you can view the pictures from this unit.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this unit.

2 Press POWER to turn on the unit.

The POWER indicator lights up green and the front panel display lights up.

When using the battery pack, the front panel display doesn't light up.

3 Press OPEN to open the disc cover.

(continued)

After doing Step 5

The menu screen may appear on the TV screen depending on the VIDEO CD. You can play the disc interactively following the instructions on the menu screen. (PBC Playback, see page 41.)

Notes

- If the disc is not inserted correctly, it may cause a malfunction.
- The power is automatically turned off whenever,
  - a disc is not being played.
  - you do not operate the unit or the remote for more than 30 minutes when using the AC power adapter (10 minutes when using the optional battery pack).
- When using as the DVD-ROM drive, the Auto Power Off function does not work.

Refer to the instructions supplied with your disc.

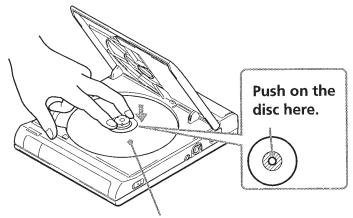
When starting playback

Adjust the sound volume to MIN (lowest level), then turn up the volume little by little.

4 Insert the disc.

When inserting a disc, please take note of the following.

- Insert the disc in a horizontal position.
- Push down gently with two fingers.
- Make sure the disc clicks into the position.



With the label side facing up

5 Close the disc cover, then press ▷.

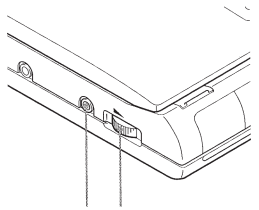
The unit starts playback (Continuous Play).
Adjust the volume on the TV or the amplifier.

To stop playback

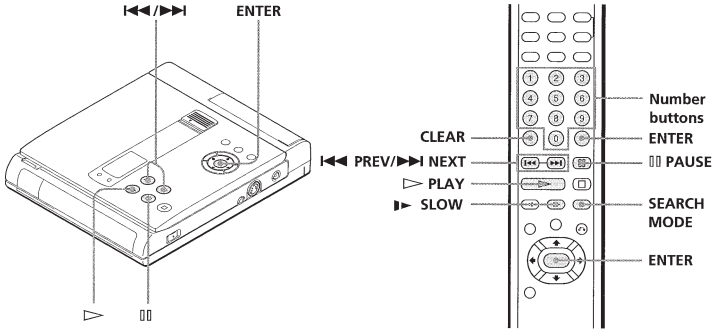
Press □.

Listening through the headphones

You can enjoy the audio sound through headphones (not supplied) after connecting to the PHONES jack. Adjusting the sound volume, turn VOL.



Various modes of playback



What are track, index, and scene?
See page 12.

Each time you press SEARCH MODE
"TRACK SEARCH," "SCENE SEARCH," and "VIDEO INDEX SEARCH" appear on the TV screen.

Notes
- Depending on the VIDEO CD, you may not be able to do some of the operations described on the right.
- Depending on the VIDEO CD, the scene you selected may not start.

To	Press
Pause	▯▯
Resume playback after pause	▯▯ or ▷
Play in slow motion[1] (VIDEO CD only)	▮► SLOW (forward way only). To return to Continuous Play mode, press ▷.
Go/back to the next/ preceding chapter in Continuous Play mode	I◄◄ /►►I
Select the track	The number buttons to select the track number, then ENTER.
Select the scene before you start playing a VIDEO CD with PBC functions and during PBC playback (Scene Search)	**1** SEARCH MODE repeatedly until "SCENE SEARCH" appears on the TV screen. **2** The number buttons to select the scene number, then ENTER.

(continued)

To	Press
Quickly locate a point while monitoring the picture (Search)	I◄◄ /►►I and hold down until you find the point. (There is no sound during Search mode.)

[1] You may not be able to play in slow motion with the PBC function.

If you enter the wrong number

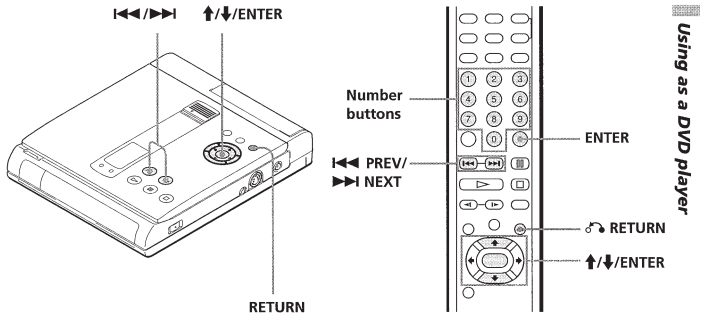
Press CLEAR, then the correct number button.

Playing VIDEO CDs with PBC functions (PBC Playback — VIDEO CD only)

When playing VIDEO CDs with PBC functions (Ver. 2.0 discs), you can enjoy simple interactive operations, operations with search functions, etc.

PBC Playback allows you to play VIDEO CDs interactively, following the menu displayed on the TV screen.

On this unit, use the number buttons, ENTER, I◄◄, ►►I, ↩ RETURN, and ↑/↓ buttons to enjoy PBC Playback.



When playing VIDEO CDs with PBC functions

PBC Playback starts automatically.

Note

Depending on the VIDEO CD, "Press ENTER" in Step 3 may be expressed as "Press SELECT" in the instructions supplied with the disc.

1 Start playing a VIDEO CD with PBC functions, following Steps 1 to 5 in "Playing a CD/VIDEO CD" on page 37.

2 Select the item number you want on the menu screen.

Press ↑/↓ to select the item number or the number buttons of the item you want.

3 Press ENTER.

4 Follow the instructions on the menu screen for interactive operations.

To cancel PBC Playback of a VIDEO CD with PBC functions (and play the disc in Continuous Play mode)

There are two ways.

- Before you start playing, select the track you want using I◄◄ or ►►I, then press ENTER or ▷.
- Before you start playing, select the track number using the number buttons on the remote, then press ENTER or ▷.

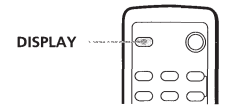
"PLAY WITHOUT PBC" appears on the TV screen and the units starts Continuous Play. You cannot display still pictures such as a menu screen.

Follow the operation below to enjoy PBC Playback.
Refer to the instructions supplied with the disc, as the operating procedure may differ according to the VIDEO CD.

To	Press
Select the item	↑/↓ to select the item number, then press ENTER.
	The number button of the item you want, then press ENTER.
Go back to the menu screen	↩ RETURN, I◄◄, or ►►I.

Using the on-screen display

You can check the operating status of the unit and the information about the disc using the on-screen display on the TV screen.



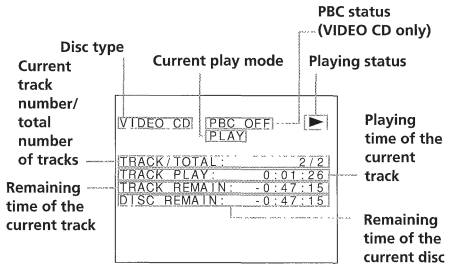
Press DISPLAY.

Each time you press the button, the on-screen display changes as follows:

On-screen display on ↔ On-screen display off

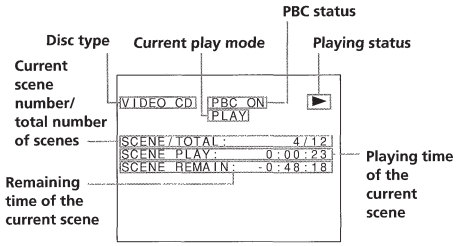
■ Display information of the on-screen display on mode

• During Continuous Play mode



During Shuffle Play or Programme Play, the remaining time of the disc is not displayed.

• During PBC Playback (VIDEO CD only)

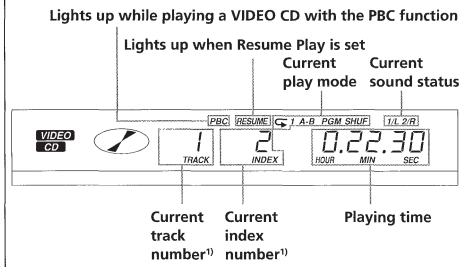


■ Display information of the on-screen display off mode

No information concerning on-screen display is displayed. (Other messages, etc., will be displayed.)

Using the front panel display

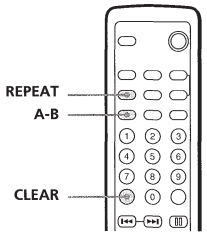
■ Display information while playing a disc



1) When you play a VIDEO CD with the PBC function, the current scene number is displayed instead of the current track and index numbers.

Playing repeatedly (Repeat Play)

You can play all the tracks on a disc, a single title/chapter/track, or a specific portion repeatedly. To set Repeat Play, use the REPEAT or A-B button.



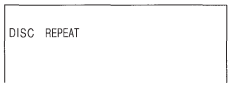
Repeating all the tracks on a disc

VIDEO CD CD

In Shuffle or Programme Play mode, the unit repeats the tracks in the shuffled or programmed order.

Press REPEAT repeatedly until "DISC REPEAT" appears on the TV screen.

"↻" appears in the front panel display. The unit repeats the tracks as follows:



When the disc is played in	The unit repeats
Continuous Play (page 37)	All the tracks in the recorded order
Shuffle Play (page 49)	All the tracks in random order every time repeat
Programme Play (page 50)	Programmed tracks

To cancel Repeat Play

Press REPEAT.

Notes

- The unit reverts to Continuous Play the next time playback starts whenever you;
  – open the disc cover.
  – turn the power off.
  – stop playback in resume off.
- You cannot repeat all the tracks in Continuous Play mode on a VIDEO CD with the PBC function.

Note

The unit reverts to Continuous Play the next time playback starts whenever you;
– open the disc cover.
– turn the power off.
– stop playback in resume off.

Repeating the current title or chapter

DVD

In Continuous Play mode (page 29), you can repeat only the current title or chapter. (You may not be able to do Repeat Play depending on the disc.)

■To repeat the current title

While the title you want is being played, press REPEAT repeatedly until "TITLE REPEAT" appears on the TV screen.

"↻ 1" appears in the front panel display. The unit repeats the current title.

■To repeat the current chapter

While the chapter you want is being played, press REPEAT repeatedly until "CHAPTER REPEAT" appears on the TV screen.

"↻ 1" appears in the front panel display. The unit repeats the current chapter.

To cancel repeating the current title or chapter

Press REPEAT repeatedly until "PLAY" appears on the TV screen.

Notes

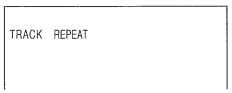
- The unit reverts to Continuous Play the next time playback starts whenever you;
  - open the disc cover.
  - turn the power off.
  - stop playback in resume off.
- You cannot repeat only the current track in Continuous Play mode on a VIDEO CD with the PBC function.

Repeating the current track VIDEO CD CD

In Continuous Play mode (page 37), you can repeat only the current track.

While the track you want is being played, press REPEAT repeatedly until "TRACK REPEAT" appears on the TV screen.

"↻ 1" appears in the front panel display. The unit repeats the current track.



To cancel repeating the current track

Press REPEAT repeatedly until "PLAY" appears on the TV screen.

Notes

- The unit reverts to Continuous Play the next time playback starts whenever you;
  - open the disc cover.
  - turn the power off.
  - stop playback in resume off.
- When you set the A↔B Repeat, the settings for the other Repeat Play, Shuffle Play, and Programme Play are cancelled.
- Some scenes in the DVD VIDEO and VIDEO CD do not allow you to do A↔B Repeat playback.

Repeating a specific portion (A↔B Repeat) DVD VIDEO CD CD

You can play a specific portion of a title/chapter/track repeatedly. This is useful, for example when you want to memorise lyrics.

During PBC Playback of VIDEO CDs (page 41), this function is available only while playing moving pictures. (You can repeat only a specific portion of moving pictures.)

You may not be able to do A-B Repeat depending on the DVD VIDEO.

1 When you find the starting point, press A-B.

The TV screen: "REPEAT A-" appears, then "B" flashes.
The front panel display: "↻ A-" appears, then "B" flashes.

2 When you reach the ending point (point B), press A-B again.

Repeat Play starts this specific portion.

The TV screen: "REPEAT A-B" appears.
The front panel display: "↻ A-B" appears.

To cancel A↔B Repeat

Press A-B repeatedly until "PLAY" appears on the TV screen.

To cancel the setting midway

Press CLEAR.

Playing in random order (Shuffle Play)

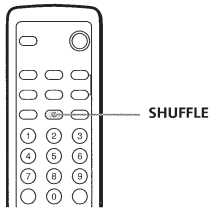
The unit can perform Repeat Play and Shuffle Play together

During Shuffle Play, press REPEAT to display "SHUFFLE REPEAT."

Notes

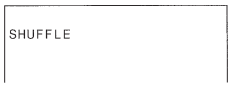
- The unit reverts to Continuous Play the next time playback starts whenever you;
  - open the disc cover.
  - turn the power off.
  - stop playback in resume off.
- You may not be able to do Shuffle Play during PBC Playback.

You can have the unit "shuffle" tracks and play them in a random order. To set Shuffle Play, use the SHUFFLE button.



Press SHUFFLE.

"SHUF" appears in the front panel display. You can play the current disc in a random order.

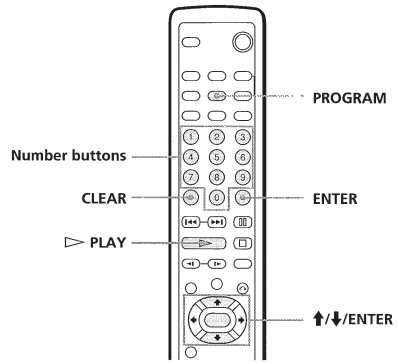


To cancel Shuffle Play

Press SHUFFLE repeatedly until "PLAY" appears on the TV screen.

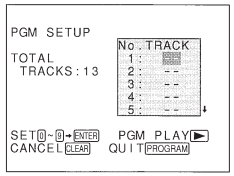
Creating your own programme (Programme Play)

You can arrange the order of the tracks on the disc and create your own programme. The programme can contain up to 20 tracks.



1 Press PROGRAM.

"PGM SETUP" appears on the TV screen.



The programme remains even after the Programme Play ends

When you press ▷ PLAY, you can play the same programme again.

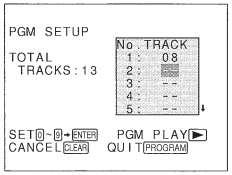
The unit can perform Repeat Play and Programme Play together

After programming, press REPEAT to change to "PROGRAM REPEAT" on the TV screen.

Notes

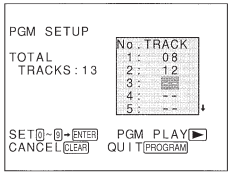
- The number of tracks displayed is that of the tracks recorded on a disc.
- The programme is cancelled and Continuous Play starts the next time playback starts when you;
  – open the disc cover.
  – turn the power off.
  – stop playback in resume off.
- You may not be able to do Programme Play during PBC Playback.

2 Select the track you want to programme using the number buttons, then press ENTER.



3 To programme other tracks, repeat Step 2.

The programmed tracks are displayed from 2 in order.



4 Press ▷ PLAY.

The programmed tracks start in order.

To cancel Programme Play

Press PROGRAM repeatedly until "PLAY" appears on the TV screen.

To cancel programming midway

Press PROGRAM.

To change programming

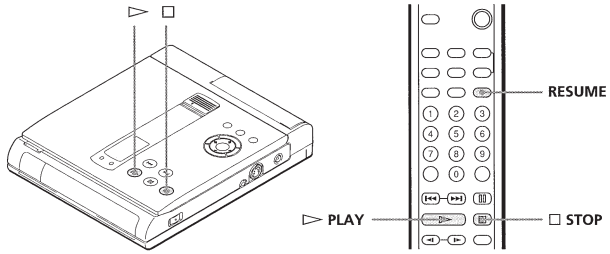
In Step 3, select the programme number of the track you want to change using the ↑/↓ buttons, then press CLEAR. Follow Step 2 for new programming.

To cancel the programmed order

To cancel a programmed track, select the track you want to clear using the ↑/↓ buttons in Step 3, then press CLEAR twice.

Resuming playback from the point where you stopped a disc (Resume Play) DVD VIDEO CD CD

The unit can store the point where you stop playback and the current play mode. During playback or stop playback, you can set Resume Play to ON/OFF using the RESUME button. When you play a VIDEO CD or CD, as long as you do not open the disc cover, the unit stores the point where you stop playback even if you turn the power off.



1 During playback or stop playback, press RESUME to display "RESUME ON" on the TV screen.

"RESUME" appears in the front panel display.

2 While playing a disc, press □ to stop playback.

"WHEN PLAYING NEXT TIME, DISC RESTARTS FROM POINT YOU STOPPED." appears on the TV screen.

If Resume Play is set to OFF

Resume Play is not available.

3 Press ▷.

The unit starts playback from the point you stopped the disc in Step 2.

(continued)

To play from the beginning of the disc

When "RESUME" appears in the front panel display during stop playback, press RESUME to turn off "RESUME," then press ▷.

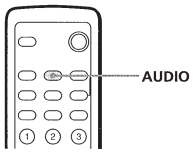
Notes

- You may not do Resume Play depending on the DVD VIDEO.
- Depending on where you stopped the disc, the unit may resume playback from a different point.
- The point where you stopped playback is cleared when you;
  - open or close the disc cover.
  - disconnect the AC power adapter and the battery pack.
  - start playback after selecting a title, chapter, or track.
  - change the setting of "INITIAL SETUP."

Changing the sounds

DVD VIDEO CD CD

With DVD VIDEOs on which multilingual sounds are recorded, you can select the language you want while playing the DVD VIDEO. With multiplex VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. In this case, the sound loses the stereo effect.

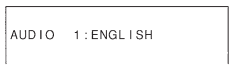


Press AUDIO while playing a disc.

Each time you press the button, the indication and the language/sound from the speakers change as follows:

■When playing a DVD VIDEO

AUDIO 1 → AUDIO 2 → .....



■When playing a VIDEO CD or CD

Indicator in the front panel display	You will hear
1/L	The sound of the left channel
2/R	The sound of the right channel
1/L 2/R	The standard stereo sound

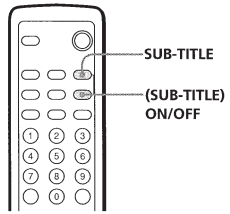
Notes

- Depending on the DVD VIDEO, you may not be able to change the languages even if multilingual sounds are recorded on the DVD VIDEO.
- Since the setting is not stored in memory, after turning the unit off or opening the disc cover, the next time an audio CD or VIDEO CD is played, the sound reverts to stereo.
- Likewise, after changing the title or opening the disc cover, the next time a DVD VIDEO is played, the sound may be changed.

Using the sub-titles

DVD

With DVD VIDEOs on which sub-titles are recorded, you can turn the sub-titles on and off and change the language of the sub-titles whenever you want while playing the DVD VIDEO.



Notes

- When playing the DVD VIDEO on which no sub-titles are recorded, no sub-titles appear even if you press (SUB-TITLE) ON/OFF.
- Depending on the DVD VIDEO, you may not be able to turn the sub-titles on even if they are recorded on the DVD VIDEO.
- Depending on the DVD VIDEO, you may not be able to turn the sub-titles off.

Turning the sub-titles on and off

Press (SUB-TITLE) ON/OFF while playing a DVD VIDEO.

Sub-titles appear on the TV screen.

To turn off the sub-titles

Press (SUB-TITLE) ON/OFF again.

Notes

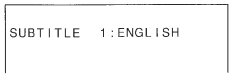
- The sorts and number of languages for sub-titles vary from disc to disc.
- Depending on the DVD VIDEO, you may not be able to change the sub-titles even if multilingual subtitles are recorded on the DVD VIDEO.
- Depending on the DVD VIDEO, you may not be able to change the sub-titles following the language for the sound, even if "AUDIO FOLLOW" is displayed.
- Since the setting is not stored in memory, after changing the title or opening the disc cover, the next time a DVD VIDEO is played, the sub-title may be changed.

Changing the sub-titles

Press SUB-TITLE while playing a DVD VIDEO.

Each time you press the button, the indication and the sub-title change as follows:

SUBTITLE 1 → SUBTITLE 2 → ... → AUDIO FOLLOW *



* When you select "AUDIO FOLLOW," the language for the sub-titles changes according to the language for the sound.

Changing the angles

DVD

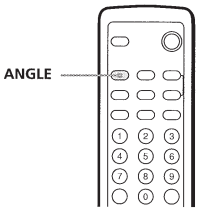
You can set the angle before reaching the position where you can change the angle

While playing a DVD VIDEO, press ANGLE when "ANGLE" is not displayed in the front panel display. When you reach the available position to change the angle, the angle is changed automatically.

Notes

- The number of angles varies from disc to disc or from scene to scene. The number of angles that can be changed for a given scene is the same as the number of angles recorded for that scene.
- Depending on the DVD VIDEO, you may not be able to change the angles even if multi-angles are recorded on the DVD VIDEO.
- Depending on the DVD VIDEO, the angle may not be changed immediately even after pressing the ANGLE button.

With DVD VIDEOs on which various angles (multi-angles) for a scene are recorded, you can change the angles whenever you want while playing the DVD VIDEO.



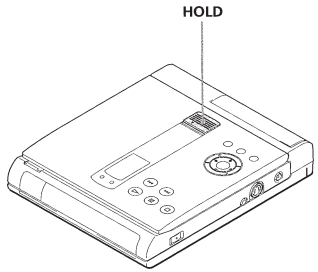
Press ANGLE while playing a DVD VIDEO and "ANGLE" appears in the front panel display.

Each time you press the button, the indication and the angle change as follows:

ANGLE 1 → ANGLE 2 → ...

Preventing accidental pressing of the buttons

You can prevent accidental pressing of the buttons on this unit (when carrying, for example). After setting the HOLD switch to ON, the buttons are locked. (You can still use the remote to operate.)



Set HOLD to the direction of the arrow.

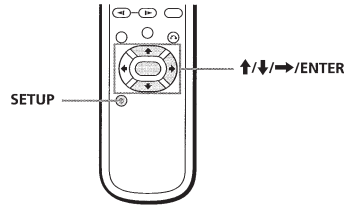
The buttons are locked.

To cancel Hold function

Set HOLD back.

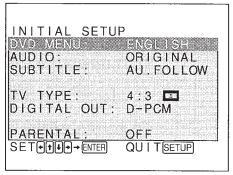
Basic settings (INITIAL SETUP)

You can make all the necessary settings for setup and connections for this unit using the INITIAL SETUP menu.

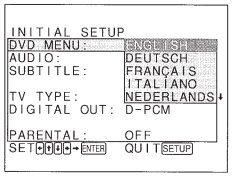


1 Press SETUP during stop playback.

The INITIAL SETUP menu appears on the TV screen.



2 Select the item using ↑/↓, then press → or ENTER.



3 Select the setting using ↑/↓, then press ENTER.

4 Press SETUP.

To cancel the Initial Setup midway

Press SETUP.

Note

Some items on "INITIAL SETUP" require operations other than selecting the setting. For details on these items, see the relevant pages.

Note
When you select a language that is not recorded on the DVD VIDEO, another recorded language is automatically selected.

Note
When you select a language that is not recorded on the DVD VIDEO, another recorded language is automatically selected.

INITIAL SETUP items

Default settings are underlined.

■DVD MENU
Switches the language for the DVD menu recorded on the DVD VIDEO.

- ENGLISH
- DEUTSCH
- FRANÇAIS
- ITALIANO
- NEDERLANDS
- OTHER→

When you select "OTHER→," select and enter the language code from the list using the number buttons (page 93).

■AUDIO
Switches the language for the sound recorded on the DVD VIDEO.

- ORIGINAL

  The original language of the disc has playing priority.
- ENGLISH
- DEUTSCH
- FRANÇAIS
- ITALIANO
- NEDERLANDS
- OTHER→

When you select "OTHER→," select and enter the language code from the list using the number buttons (page 93).

Notes
- You cannot use the sub-titles with some DVD VIDEOs on which sub-titles are not recorded.
- Depending on the DVD VIDEO, you may not be able to change the sub-titles even if sub-titles are recorded on the DVD VIDEO.
- When you select a language that is not recorded on the DVD VIDEO, another recorded language is automatically selected.
- When you select AU. FOLLOW, the same language used as "DVD AUDIO" appears as the sub-title.

Note
Depending on the DVD VIDEO, you may not be able to change the aspect ratio of the playback picture (see "Logo marks of DVD VIDEOs" on page 10).

■SUBTITLE
Switches the language for the sub-title recorded on the DVD VIDEO.

- AU. FOLLOW
- ENGLISH
- DEUTSCH
- FRANÇAIS
- ITALIANO
- NEDERLANDS
- OTHER→
- TITLE OFF

When you select "OTHER→," select and enter the language code from the list using the number buttons (page 93).

■TV TYPE
Selects the aspect ratio of the TV to be connected.

- 4:3 (LETTER BOX)

  When you connect a normal TV to the unit.

  When you play a wide picture recorded on a DVD VIDEO, the picture is displayed with bands across the upper and lower portions of the screen.

- 4:3 (PAN SCAN)

  When you connect a normal TV to the unit.

  When you play a wide picture recorded on a DVD VIDEO, a portion of the picture is automatically cut off from the left and right sides of the image.

- 16:9

  When you connect a wide-screen TV to the unit.

Note
Select the setting correctly using "DIGITAL OUT." Otherwise, either no sound will come from the speakers or else strange sound will come from the speakers, affecting your ears or causing the speakers to be damaged.

■DIGITAL OUT
Switches the outputting methods of audio signals from the PCM/MPEG/DOLBY DIGITAL connector on the side panel of the player.

- D-PCM (Downmix PCM)

  When the unit is connected to an audio component without a built-in MPEG Audio decoder or a built-in Dolby Digital (AC-3) decoder.

  If you play MPEG or Dolby Digital (AC-3) sound tracks, the output audio signals are mixed down to 2 channels.

- MPEG

  When the unit is connected to an audio component with a built-in MPEG Audio decoder.

  If you play the Dolby Digital (AC-3) sound track, the output signal is stereo.

- DOLBY DIGITAL

  When the unit is connected to an audio component with a built-in Dolby Digital (AC-3) decoder.

  If you play the MPEG sound tracks, the output signal is stereo.

- MPEG/DOLBY DIGITAL

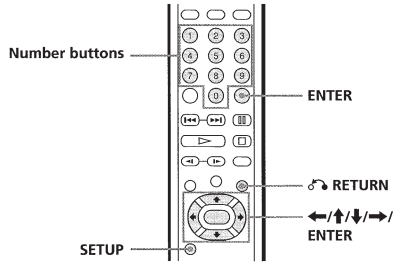
  When the unit is connected to an audio component with a built-in MPEG Audio/Dolby Digital (AC-3) decoder.

  The unit outputs the appropriate signals automatically, when you play a DVD VIDEO.

■PARENTAL CONTROL
Set a password and playback limitation level when you play DVD VIDEOs with playback limitation for children. For details, see "Limiting playback by children (Parental Control)" on the next page.

Limiting playback by children (Parental Control)

Playing some DVD VIDEOs can be limited depending on the age of users. The Parental Control function allows you to set a playback limitation level.



Note
If you change a country as the standard for playback limitation level, select "COUNTRY" using ←/↑/↓/→, then press ENTER. When you select "OTHER," select and enter the country code from the list using the number buttons (page 66).

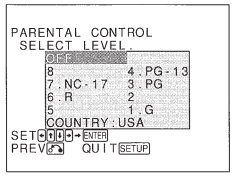
Setting the Parental Control

1 Press SETUP during stop playback.

The INITIAL SETUP menu appears on the TV screen.

2 Select "PARENTAL" using ↑/↓, then press → or ENTER.

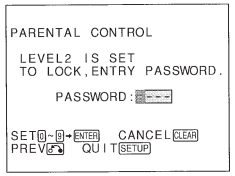
The PARENTAL CONTROL menu appears.



3 Select the level using ←/↑/↓/→, then press ENTER.

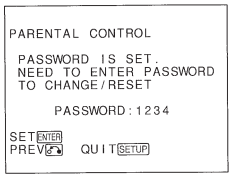
As the number of the level gets smaller, the restriction gets more severe.

The display for entering a password appears.



4 Enter a four-digit number using number buttons, then press ENTER.

The display for confirming a password appears.



5 Press ENTER.

The Parental Control level is locked, and the INITIAL SETUP menu appears.

To go back to the previous menu to change the setting

Press ↶ RETURN.

To return to the normal screen

Press SETUP.

Country code list

Code	Country	Code	Country
2046	Austria	2363	Malaysia
2057	Belgium	2376	Netherlands
2079	Canada	2379	Norway
2092	China	2424	Philippines
2115	Denmark	2501	Singapore
2165	Finland	2149	Spain
2174	France	2499	Sweden
2109	Germany	2086	Switzerland
2219	Hong Kong	2543	Taiwan
2238	Indonesia	2528	Thailand
2254	Italy	2184	United Kingdom
2276	Japan		

Notes

- When you play DVD VIDEOs without the Parental Control function, playback cannot be limited on this unit.
- Depending on the DVD VIDEO, you may be asked to change the Parental Control level while playing the disc. In this case, enter the password, then change the level.

  When you stop playing the DVD VIDEO, the level returns to the original level.

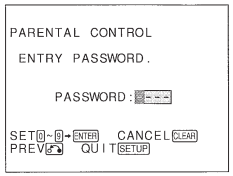
Changing/cancelling the Parental Control

1 Press SETUP during stop playback.

The INITIAL SETUP menu appears on the TV screen.

2 Select "PARENTAL" using ↑/↓, then press → or ENTER.

The display for confirming the password appears.



3 Enter the four-digit number you set using number buttons, then press ENTER.

The display for setting the level appears.

4 Select the level using ←/↑/↓/→, then press ENTER.

As the number of the level gets smaller, the restriction gets more severe.

When playing a disc without the Parental Control function, select "OFF" using ←/↑/↓/→, then press ENTER.

5 Confirm the password, then press ENTER.

If you want to change your password entered in Step 3, enter the new password using the number buttons, then press ENTER.

The display for confirming the password appears.

6 Press SETUP.

The Parental Control level is locked.

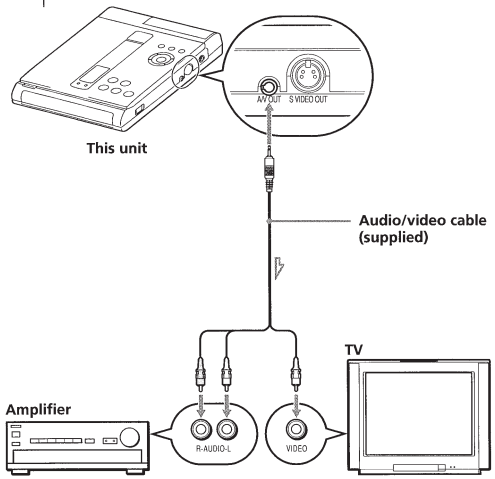
If you forget your password

Enter "84173" as the password in Step 3.

Using the audio amplifier

Connecting to the audio amplifier

Connect the TV and the amplifier using the audio/video cable (supplied).



Use the same connections if your amplifier conforms to "Pro Logic."

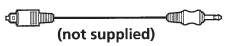
Note
Refer to the instructions supplied with the component to be connected.

Connecting to a digital component with a built-in MPEG Audio decoder or Dolby Digital decoder

Connect the component via the PCM/MPEG/DOLBY DIGITAL connector using an optical digital cable (not supplied). When the component with a built-in MPEG Audio decoder or Dolby Digital decoder is connected, the unit plays DVD VIDEOs with sound recorded in MPEG Audio and Dolby Digital (AC-3) format which produces the effect of being in a movie theatre or a concert hall.

When you play a DVD VIDEO, set "DIGITAL OUT" in "INITIAL SETUP" to "MPEG," "DOLBY DIGITAL," or "MPEG/DOLBY DIGITAL" (page 63).

Optical digital cable

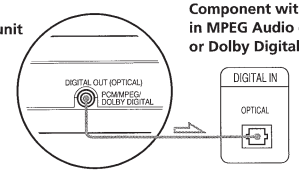


(not supplied)

Insert the plug firmly.

This unit

Component with a built-in MPEG Audio decoder or Dolby Digital decoder



Notes
- Refer to the instructions supplied with the component to be connected.
- You cannot make digital audio recordings of discs recorded in Dolby Digital (AC-3) format directly using an MD deck or DAT deck.

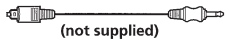
Note on digital recording
This player can be connected to an optional MD unit. Before making a digital recording, be sure that "CD" appears in the front panel display after turning this player on or closing the disc cover. Otherwise, the track numbers may not be recorded correctly.

Connecting to a digital component such as an amplifier with a digital input connector, DAT or MD

Connect the component via the PCM/MPEG/DOLBY DIGITAL connector using an optical digital cable (not supplied).

When you play a DVD VIDEO, set "DIGITAL OUT" in "INITIAL SETUP" to "D-PCM" (page 63).

Optical digital cable

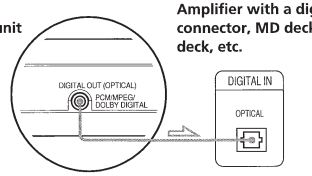


(not supplied)

Insert the plug firmly.

This unit

Amplifier with a digital connector, MD deck, DAT deck, etc.



When you make the connections above, set "DIGITAL OUT" in "INITIAL SETUP" to "D-PCM" (Downmix PCM). Otherwise, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.

Using the rechargeable battery pack

You can use headphones (not supplied) and a rechargeable battery pack (not supplied) to enjoy the unit indoors or outdoors.

See below for compatible batteries.

Note
NP-F530 and NP-F550 are not compatible.

Compatible battery pack

See below for a list of compatible battery packs, and the corresponded playing time and charging time.

Battery life

unit (approx.): hour

Battery pack	Playing time with		
	DVD VIDEO	VIDEO CD	Audio CD
NP-F730	2.0	3.0	2.8
F750	2.3	3.4	3.2
F930	3.3	4.8	4.5
F950	3.6	5.2	4.9

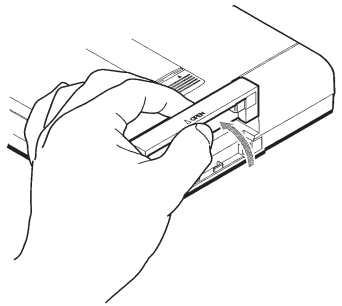
Battery pack	Playing time with	
	CD-ROM	DVD-ROM
NP-F730	2.4	1.8
F750	2.7	2.1
F930	4.0	3.2
F950	4.3	3.5

Charging time

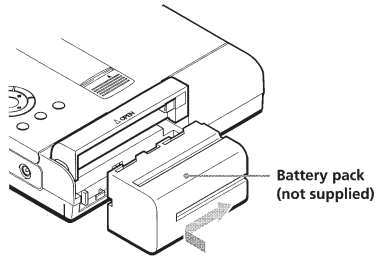
Battery pack	Charging time (Fully charged)
NP-F730	6.5
F750	7.0
F930	10.0
F950	11.0

Attaching the battery pack

1 Open the battery cover until the click sounds.



2 Attach the battery pack.



To prevent accidental pressing of the buttons

Turn the power off during the attachment.

Notes

- If you turn on the unit while charging, charging is suspended until you turn off the unit.
- If you press ▷ while charging, charging is suspended and playback starts. Charging will resume when you turn off the unit.
- If you press OPEN while charging, charging is suspended. After a while, the charging restarts.

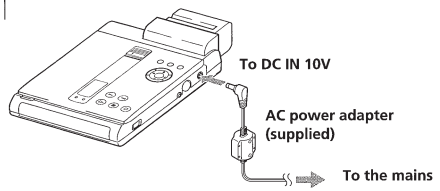
Recharging the battery pack

After attaching the battery pack, connect the AC power adapter, then recharge the battery pack. (When using a recharged battery pack, the AC power adapter is not necessary.)

1 Attach the battery pack to the unit.

2 Connect the AC power adapter to the unit and plug into the mains.

When charging starts, "CHG" appears in the front panel display.



3 Disconnect the AC power adapter from the unit and pull out from the mains after charging.

When charging is complete, "CHG" disappears from the front panel display.

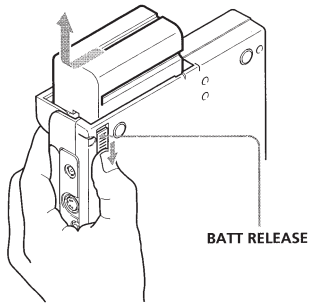
When to recharge the battery pack

When the battery power becomes weak, "⇦" appears on the TV screen and in the front panel display while using the unit. If you continue to use the unit while "⇦" is displayed, eventually the unit will stop working. Connect the AC power adapter to start recharging the battery pack.

Detaching the battery pack

Slide BATT RELEASE to detach the battery pack.

Be careful not to drop the battery pack.



Precautions

On safety

- Caution - The optical instruments with this product will increase eye hazard.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.

Road safety

Do not use headphones/earphones while driving, cycling, or operating any motorised vehicle. It may create a traffic hazard and is illegal in some areas. It can also be potentially dangerous to play your headsets at high volume while walking, especially at pedestrian crossings. You should exercise extreme caution or discontinue use in potentially hazardous situations.

On power sources

- Disconnect the DC IN 10V jack first, then disconnect from the mains, even if the unit itself has been turned off.
- If you are not going to use the unit for a long time, be sure to disconnect the unit from the mains and/or detach the battery pack. To disconnect the AC power adapter, grasp the plug itself; never pull the cord.

On placement

Do not place the unit in a location where it is;

- On pedestal or unstable place
- On the rug or carpet
- On unleveled surface
- Very humid or a wobble where there is no ventilation
- Subject to excessive dust
- Subject to direct sunlight or extremely hot
- Extremely cold
- Near a tuner, TV, or VCR.
  (Sound noise or picture noise may occur when another TV, tuner, VCR, or other electrical appliance is near by. Indoor aerials may also adversely effect picture and sound quality. In this case, use an outdoor aerial instead.)

On operation

- If the unit is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the unit. Should this occur, the unit may not operate properly. In this case, remove the disc and leave the unit turned on for about 30 minutes until the moisture evaporates. If the unit doesn't operate properly after hours, please consult your nearest Sony dealer.
- While operating, do not move, shake, or otherwise allow any shock to the unit. It may cause a malfunction.
- Use this unit in a stable, horizontal position where it is not subject to vibration.

On adjusting the volume

Do not turn up the volume while listening to a portion with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.
Turn the volume down before you start playback.

On the rechargeable lithium-ion battery (not supplied)

- Keep the battery away from fire.
- Keep the battery dry.
- Do not expose the battery to any mechanical shock.
- Do not open nor convert the battery.

On SCSI PC card

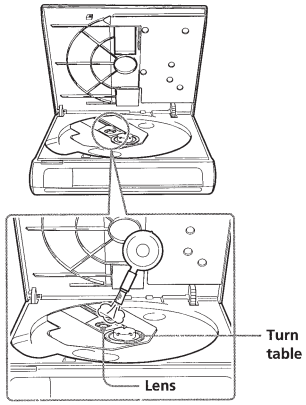
- Do not leave the SCSI PC card on a rug, etc. to protect it from static electricity. The components on the card can be destroyed by static electricity.
- Do not directly touch the connecter.
- The SCSI PC card consists of electronic components that have precise dimensions. Do not drop or bump the SCSI PC card.
- To remove the SCSI PC card, follow the instructions for the PC card slot on your PC. If you remove the SCSI PC card by force, the SCSI PC card or your PC may be damaged.
- Do not disconnect or connect the interface cable when the SCSI PC card is connected to your PC.
- Do not expose the SCSI PC card to water.

On cleaning the cabinet

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzine.

On cleaning the lens and turn table

- Do not touch the lens or surrounding area and be sure to keep the disc cover closed except when inserting or removing discs to protect against dust.
- If you accidentally touch the lens with dirty fingers or if dust on the lens prevents the unit from operating properly, clean the lens with the KK-DM1 lens cleaning kit (not supplied).



- If the turn table does not work properly, check for dust or dirt on the turntable and clean using a soft cloth.
- Never remove the printed "Warranty void if removed." seal attached around the lens.

On transportation

- When you transport this unit, use the original carton box and packing materials.
- Before you move this unit, make sure to remove the disc inserted.

If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

IMPORTANT NOTICE

Caution: The enclosed DVD Unit is capable of holding a still video image or Menu image on your television screen indefinitely. If you leave the still video image or Menu image displayed on your TV for an extended period of time, you risk permanent damage to your television screen. Projection televisions are very susceptible.

Notes on discs

On handling discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.
- Do not write on or stick paper or tape to the surface of the disc.
- Do not use a disc with tape, seals, or paste on it as this may damage the unit.

- Use only a disc with a circle shape. Do not use a disc with any other shape (star type, heart type, etc.), as this may damage the unit.

On safekeeping

- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as there can be considerable rise in temperature inside the car.
- After playing, store the disc in its case. Piling up discs without cases or leaving the disc exposed may cause the disc shape to warp.

On cleaning

- Dirt from a fingerprint or dust causes picture noise or declining sound quality. Always keep the disc clean.
- Clean the disc with a cleaning cloth. Wipe the disc from the centre out.

- For dirt, clean the disc with a soft cloth slightly moistened with water, then remove the moisture with a soft dry cloth.
- Do not use solvents such as benzine, thinner, commercially available cleaners, or antistatic spray intended for vinyl LPs.

Troubleshooting

If you experience any of the following difficulties while using the unit, use this troubleshooting guide to help you remedy the problem. Should any problem persist, consult your nearest Sony dealer.

When using as a DVD-ROM drive

The POWER/BUSY indicators are not lit when you turn on the unit.

→ Make sure the AC power adapter or battery pack is connected correctly.

This unit cannot be read on your PC or cannot work normally.

→ Make sure the driver of this unit is installed.
→ Make sure the SCSI PC card is connected correctly.
→ Make sure the SCSI PC card to the PC card slot on your PC is connected securely.
→ Check that the PC card slot pins are not broken or bent.
→ Make sure to turn on this unit before turning on your PC.
→ Check that the SCSI ID number is not the same as the other units' SCSI ID number connected with your PC. If it is the same, change the SCSI ID number, then turn off and on this unit and restart your PC.
→ Use the supplied SCSI PC card. Using another SCSI card may not work properly.
→ Check that the battery is not fully consumed.
→ Clean the turn table with a soft dry cloth.

Sound jumps or data cannot be read.

→ Insert the disc with the playback side facing down correctly.
→ Do not insert a disc which the unit cannot play.
→ Clean the disc and the lens of the unit.
→ The disc may have scratches. Replace with another disc to make sure this unit does not have any problem.
→ Clean the turn table.
→ Moisture has condensed inside the unit. Remove the disc and leave the unit turned on for about 30 minutes.
→ Clean the turn table with a soft dry cloth.

There is no sound.

→ Set the volume level in "Volume Control" on Windows 95 or check the setting on "Selecting" the audio source or "Mute."
→ While playing an audio disc such as an audio CD with your PC, the sound of the disc comes out only from the PHONES jack and the A/V OUT jack. In this case, the sound does not come from the speakers of the PC.

Sending the data speed is slow.

→ Your PC may have a Power Management function. Check the CPU speed setting. (Refer to the instructions of the PC.)
→ If the CD-ROM is dirty or scratched, the data speed may be changed to about 4× transmission speed.

Motion pictures do not play on your PC.

→Depending on the DVD-ROM, additional hardware (MPEG2 decoder) for the PC may be required. In this case, the motion pictures do not play normally. Please ask the sales agency of the DVD-ROM.

→ Pictures decoded on the MPEG2 built-in decoder cannot be displayed on the PC via SCSI.

When using as a DVD player

The power is not turned on.

→If the POWER indicator is not lit, check that the AC power adapter is connected securely. When using the battery pack, check the consumption.

→Make sure you use the supplied AC power adapter. (Do not use any other AC power adapter.)

→Check that the HOLD switch is set to off.

→Disconnect the AC power adapter from this unit and the mains for more than one minute. Then connect the AC power adapter and turn the power on again. If the power is still not turned on, disconnect the AC power adapter and the battery pack and refer to your nearest Sony dealer.

"COS Lo dc In" appears in the front panel display.

→When using the battery pack, the AC power adapter is not connected to the mains even if the AC power adapter is connected to the unit. Disconnect the AC power adapter from the unit.

→Check that the AC power adapter is connected to the mains, then disconnect from this unit and connect again.

There is no picture.

→Check that the unit is connected securely.

→The video connecting cable is damaged. Replace it with a new one.

→Make sure you connect the unit to the video input connector on the TV (page 25).

→Make sure you turn on the TV.

→Make sure you select the video input on the TV so that you can view the pictures from the unit.

There is no sound.

→Check that the unit is connected securely.

→The audio connecting cable is damaged. Replace it with a new one.

→Make sure you connect the unit to the audio input connectors on the amplifier (page 68).

→Make sure you turn on the TV or the amplifier.

→Make sure you select the appropriate position on the amplifier so that you can listen to the sound from the unit.

→The unit is in pause mode or in Slow-motion Play mode. Press ▷ to return to Continuous Play mode.

→The unit is in Search mode. Press ▷ to return to Continuous Play mode.

→When you connect the unit to an amplifier with DIGITAL OUT, set "DIGITAL OUT" in "INITIAL SETUP" correctly (pages 69, 70).

→Check that the headphones plug connected to the headphones jack is firmly connected to this unit.

→Check that the VOL dial is not set to "0."

(continued)

The remote does not function.

→Remove any obstacles between the remote and the unit.

→Use the remote near the unit.

→Point the remote at the remote sensor ▣ on the unit.

→Replace all the batteries in the remote with new ones if they are weak.

→Make sure you are using the supplied remote.

Picture noise appears when the unit is connected to the TV via the VCR.

→Do not connect the unit to the VCR. Connect the unit directly to the TV (page 25).

Picture noise appears when you record and play back the picture of a DVD VIDEO on a VCR.

→This unit features a copy protection function developed by Macrovision. Copy protection signals are recorded on some DVD VIDEOs. When you play and record the pictures of these discs on a VCR, picture noise appears.

Sound or picture noise occurs.

→Clean the disc.

→Connect the audio plug of the connecting cable firmly.

→This unit features a copy protection function developed by Macrovision. Copy protection signals are recorded on some DVD VIDEOs. When you play these discs, picture noise may appear on some TVs and projectors.

→Check that this unit is placed in a horizontal position.

The disc does not play.

→There is no disc inside. Insert a disc.

→Insert the disc with the playback side facing down correctly.

→Insert the disc correctly (pages 30, 38).

→Clean the disc.

→Do not insert a disc which the unit cannot play (page 7).

→Check the region code of the DVD VIDEO (page 7).

→Moisture has condensed inside the unit. Remove the disc and leave the unit turned on for about one hour. Then turn the power off and then on again, and start playback (page 75).

→Check that this unit is placed in a horizontal position.

→The Parental Control function is set (page 64).

The unit does not play from the beginning when playing a disc.

→Resume Play is set. Press RESUME on the remote during stop playback. After "RESUME" disappears in the front panel display, start playback (page 53).

→A title menu, a DVD menu, or a PBC menu automatically appears on the TV screen (pages 33, 34, 41).

The DVD VIDEO does not play when you select a title.

→The Parental Control function is set (page 64).

The unit starts playing automatically.

→The DVD VIDEO features the auto playback function.

Stopping playback, Search, Slow-motion Play, etc. cannot be performed.

→Depending on the disc, you may not be able to do some of the operations. (Refer to the instructions supplied with the discs.)

Shuffle Play, Programme Play, etc. cannot be performed.

→Depending on the DVD VIDEO or VIDEO CD, you may not be able to do these functions.

The disc rotation speed is changed.

→The disc rotation speed may differ, depending on the disc.

→When the optional digital cable is connected, the disc rotation speed may be changed.

The language for the sound cannot be changed when you play a DVD VIDEO.

→Multilingual sound is not recorded on the DVD VIDEO.

→Changing the language for the sound is prohibited on the DVD VIDEO.

The language for the sub-titles cannot be changed when you play a DVD VIDEO.

→Multilingual sub-titles are not recorded on the DVD VIDEO.

→Changing the language for the sub-titles is prohibited on the DVD VIDEO.

The sub-titles cannot be turned off when you play a DVD VIDEO.

→Turning the sub-titles off is prohibited on the DVD VIDEO.

The angles cannot be changed when you play a DVD VIDEO.

→Multi-angles are not recorded on the DVD VIDEO.

→Change the angles when "ANGLE" appears in the front panel display (page 58).

→Changing the angles is prohibited on the DVD VIDEO.

The Parental Control function does not work.

→Parental Control is not recorded on the DVD VIDEO.

→The country setting on the Parental Control level menu is not correct. Set the country (page 64) and refer to the instruction of the DVD VIDEO.

The aspect ratio of the screen cannot be changed when you play a wide picture of the DVD VIDEO.

→The aspect ratio is fixed on your DVD VIDEO (page 10).

The menu screen does not appear when you play a VIDEO CD.

→The VIDEO CD does not feature PBC functions.

→Follow the correct operating procedure. (Also refer to the instructions supplied with the VIDEO CD.)

The sound loses stereo effect when you play a VIDEO CD or a CD.

→"1/L" or "2/R" appears in the front panel display.
On the remote, press AUDIO CHANGE repeatedly until "1/L 2/R" appears (page 55).

The power is turned off automatically.

→The Auto Power Off function is activated. (If you do not operate the unit or the remote for more than 30 minutes while using the AC power adapter or for more than 10 minutes while using the battery pack when a disc is not being played, the power will be automatically turned off. When using this unit as the DVD-ROM drive, the Auto Power Off function does not work.)

(continued)

Indications in the front panel display are too light.

→The liquid crystal of the front panel display is already adjusted to be seen clearly from the front. It is not a malfunction if the indication appears vague when viewing from an obscure angle.

The unit or the AC power adapter heats up.

→It is not a serious problem. (If the AC power adapter heats up excessively, disconnect the AC power adapter and the optional battery pack, then consult your nearest Sony dealer.)
Touching this unit or the AC power adapter for a long time may cause a slight burning sensation.

Note

If the unit does not play normally while using the AC power adapter due to static electricity, etc., disconnect the plug from the mains and the AC power adapter from the unit, then plug in and connect the AC power adapter to the unit again.

The OPEN button does not work.

→ The Hold function is on. Slide the HOLD switch to OFF.

→ The power is not supplied from the AC power adapter or the battery pack. Supply the power source or slide the MANUAL LID RELEASE switch on the rear panel in the direction of the arrow.

"⃠" appears on the TV screen even after pressing operation buttons.

→The DVD VIDEO is unable to do the operation.

The alphabet and numbers appear on the TV screen or in the front panel display.

→ Self-diagnosis function is currently working (page 87).

When a DVD VIDEO, VIDEO CD, or audio CD is inserted, "DVD-ROM" or "CD-ROM" appears in the front panel display.

→ Clean the disc, or check that the disc does not have scratches.

→ Insert the disc correctly.

Glossary

Chapter
Sections of a picture or a music piece on a DVD VIDEO that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want.

Dolby Digital (AC-3)
Digital audio compression technology that the Dolby Laboratories Corporation developed. This technology conforms to 5.1-channel surround. When connecting a component with a built-in Dolby Digital decoder, you can enjoy more real audio presence.

DVD
A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.

The data capacity of a single-layer and single-sided DVD, at 4.7 GB (Giga Byte), is 7 times that of a CD. Furthermore, the data capacity of a dual-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD 9.4 GB, and a dual-layer and double-sided DVD 17 GB.

DVD VIDEO
A DVD recorded with moving pictures. On a DVD VIDEO, the picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 of its original size. The DVD also uses the variable rate coding technology that changes the data to be allocated according to the status of the picture. The audio data is recorded in Dolby Digital (AC-3) as well as in PCM, allowing you to enjoy more real audio presence.

Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with DVD VIDEOs.

MPEG Audio
International standard coding system to compress audio digital signals authorised by ISO/IEC. MPEG 1 compatible up to 2-channel stereo. MPEG 2 used on DVDs compatible up to 7.1-channel surround. It realises the backward compatibility – you can play the MPEG 2 sound track with a unit which conforms to MPEG 1.

Multi-angle function
Various angles, or viewpoints of the video camera, for a scene are recorded on some DVD VIDEOs.

Multilingual function
Several languages for the sound or sub-titles in a picture are recorded on some DVD VIDEOs.

Parental Control
A function of the DVD VIDEO for playback limitation of the disc by the age of the users according to the limitation level in each country. The limitation varies from disc to disc; when it is activated, playback is completely prohibited, or violent scenes are skipped or replaced with other scenes etc.

Playback Control (PBC)
Signals encoded on VIDEO CDs (Version 2.0) to control playback.

By using menu screens recorded on VIDEO CDs with PBC functions, you can enjoy playing simple interactive programmes, programmes with search functions, and so on.

Title
The longer sections of a picture or a music piece on a DVD VIDEO; a movie, etc., or a picture piece on a video software or an album, etc., or a music piece on an audio software. Each title is assigned a title number enabling you to locate the title you want.

Track
Sections of a picture or a music piece on a CD or VIDEO CD. Each track is assigned a track number enabling you to locate the track you want.

VIDEO CD
A compact disc that contains moving pictures.

The picture data uses the MPEG 1 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/140 of its original size. Consequently, a 12 cm VIDEO CD can contain up to 74 minutes of moving pictures.

VIDEO CDs also contain compact audio data. Sounds outside the range of human hearing are compressed while the sounds we can hear are not compressed. VIDEO CDs can hold 6 times the audio information of conventional audio CDs.

There are 2 versions of VIDEO CDs.

- Version 1.1: You can play only moving pictures and sounds.
- Version 2.0: You can play high-resolution still pictures and enjoy PBC functions.

This unit conforms to both versions.

Language code list

For details, see pages 61 and 62.

The language spellings conform to the ISO 639: 1988 (E/F) standard (December 1996).

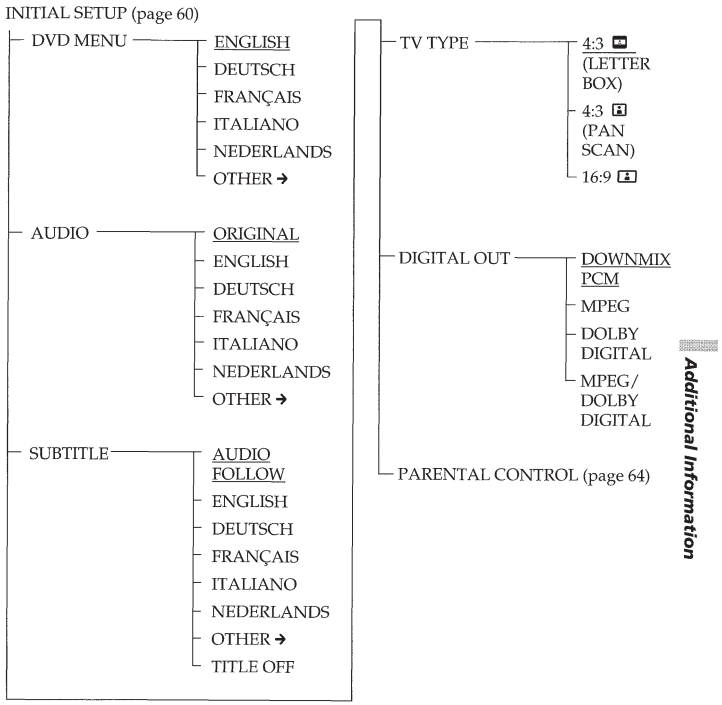
Code	Language	Code	Language	Code	Language
1027	Afar	1149	Spanish	1261	Japanese
1028	Abkhazian	1150	Estonian	1269	Yiddish
1032	Afrikaans	1151	Basque	1283	Javanese
1039	Amharic	1157	Persian	1287	Georgian
1044	Arabic	1165	Finnish	1297	Kazakh
1045	Assamese	1166	Fiji	1298	Greenlandic
1051	Aymara	1171	Faroese	1299	Cambodian
1052	Azerbaijani	1174	French	1300	Kannada
1053	Bashkir	1181	Frisian	1301	Korean
1057	Byelorussian	1183	Irish	1305	Kashmiri
1059	Bulgarian	1186	Scots Gaelic	1307	Kurdish
1060	Bihari	1194	Galician	1311	Kirghiz
1061	Bislama	1196	Guarani	1313	Latin
1066	Bengali; Bangla	1203	Gujarati	1326	Lingala
1067	Tibetan	1209	Hausa	1327	Laothian
1070	Breton	1217	Hindi	1332	Lithuanian
1079	Catalan	1226	Croatian	1334	Latvian; Lettish
1093	Corsican	1229	Hungarian	1345	Malagasy
1097	Czech	1233	Armenian	1347	Maori
1103	Welsh	1235	Interlingua	1349	Macedonian
1105	Danish	1239	Interlingue	1350	Malayalam
1109	German	1245	Inupiak	1352	Mongolian
1130	Bhutani	1248	Indonesian	1353	Moldavian
1142	Greek	1253	Icelandic	1356	Marathi
1144	English	1254	Italian	1357	Malay
1145	Esperanto	1257	Hebrew	1358	Maltese

(continued)

Code	Language	Code	Language	Code	Language
1363	Burmese	1501	Sangho	1531	Turkmen
1365	Nauru	1502	Serbo-Croatian	1532	Tagalog
1369	Nepali	1503	Singhalese	1534	Setswana
1376	Dutch	1505	Slovak	1535	Tonga
1379	Norwegian	1506	Slovenian	1538	Turkish
1393	Occitan	1507	Samoan	1539	Tsonga
1403	(Afan) Oromo	1508	Shona	1540	Tatar
1408	Oriya	1509	Somali	1543	Twi
1417	Punjabi	1511	Albanian	1557	Ukrainian
1428	Polish	1512	Serbian	1564	Urdu
1435	Pashto; Pushto	1513	Siswati	1572	Uzbek
1436	Portuguese	1514	Sesotho	1581	Vietnamese
1463	Quechua	1515	Sundanese	1587	Volapük
1481	Rhaeto-Romance	1516	Swedish	1613	Wolof
1482	Kirundi	1517	Swahili	1632	Xhosa
1483	Romanian	1521	Tamil	1665	Yoruba
1489	Russian	1525	Telugu	1684	Chinese
1491	Kinyarwanda	1527	Tajik	1697	Zulu
1495	Sanskrit	1528	Thai	1703	Not specified
1498	Sindhi	1529	Tigrinya		

INITIAL SETUP items list

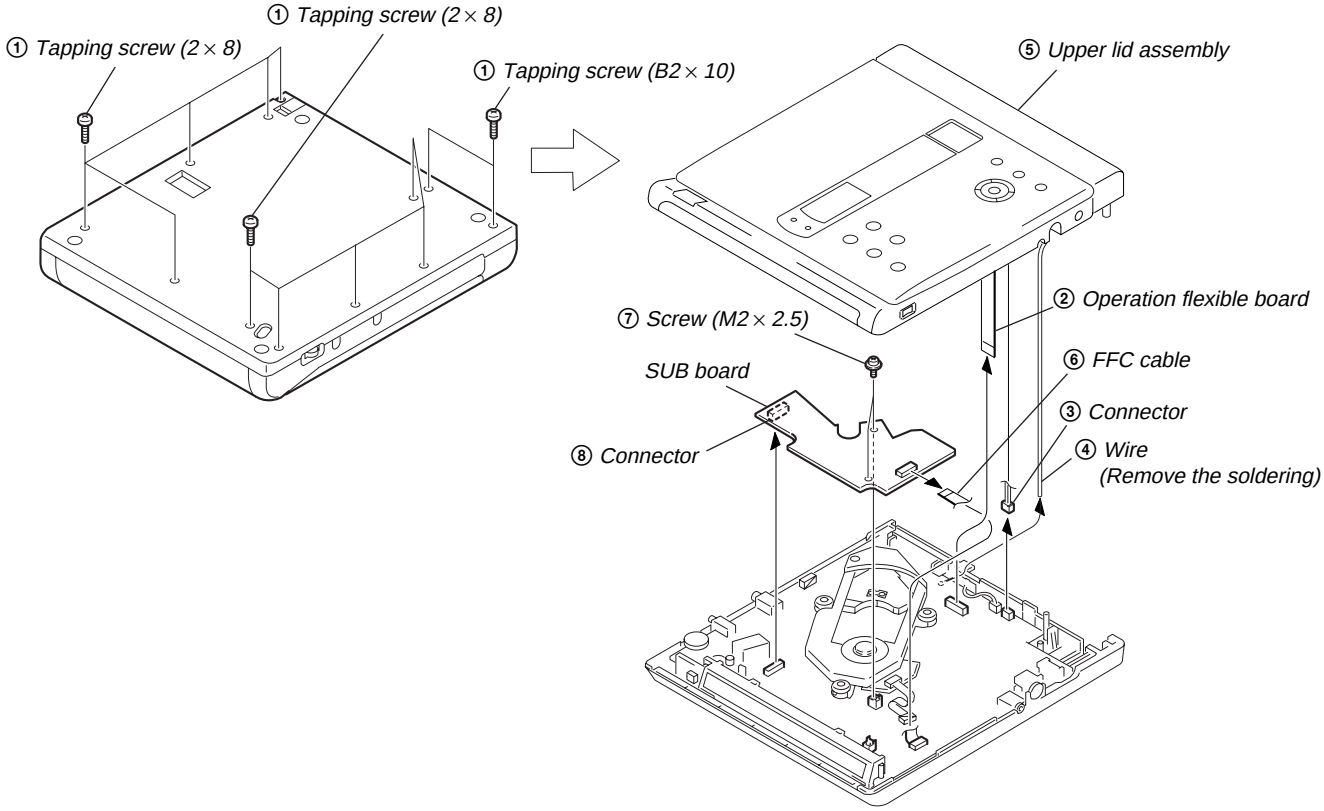
Default settings are underlined.



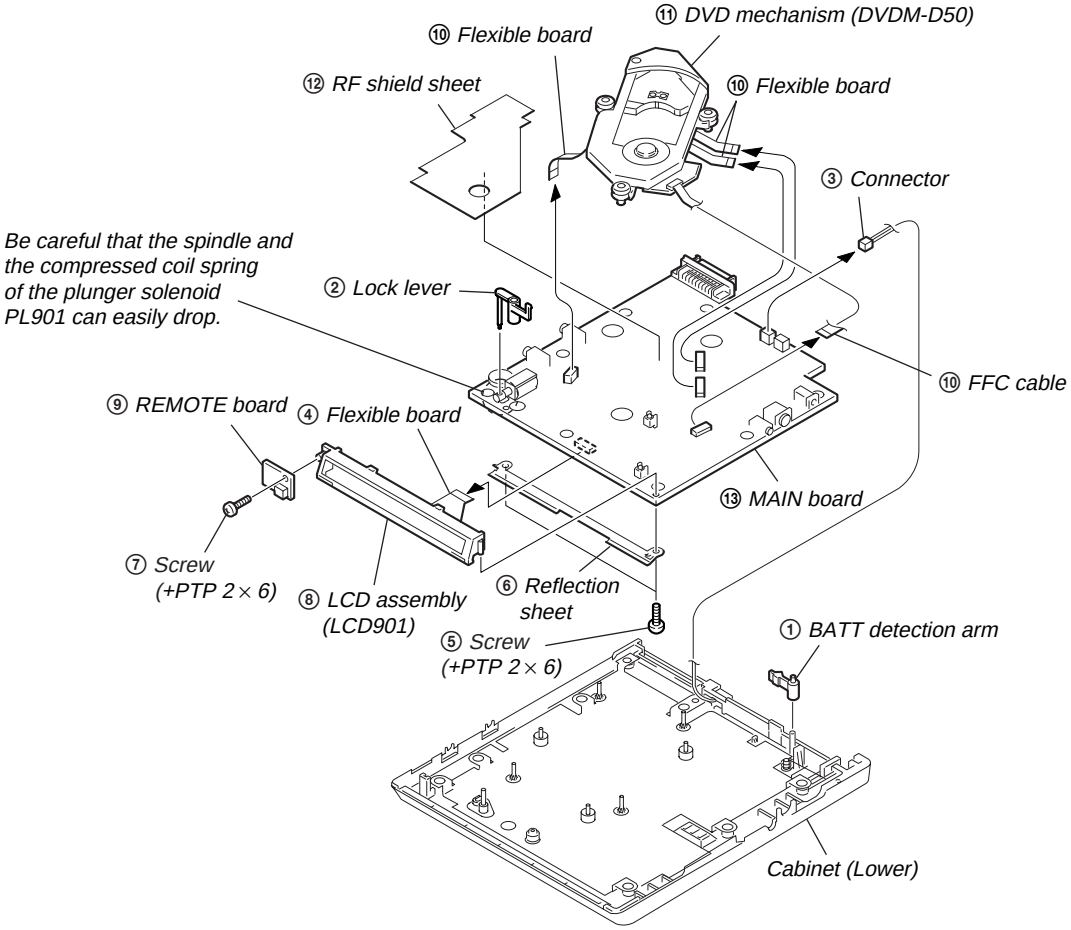
SECTION 2
DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

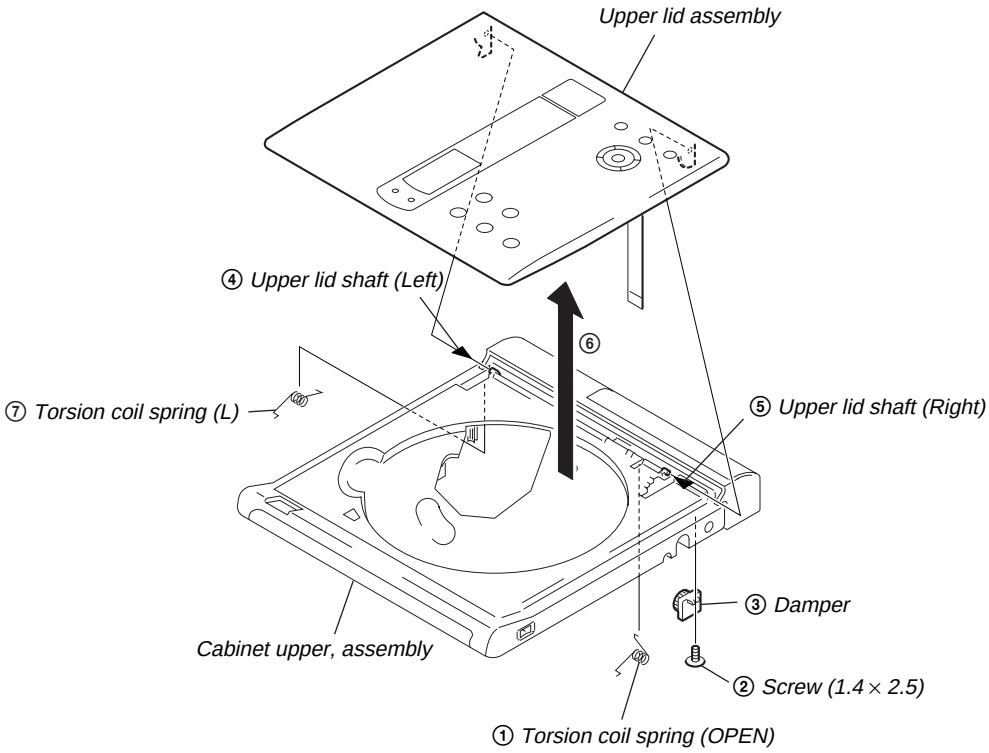
2-1. SUB BOARD



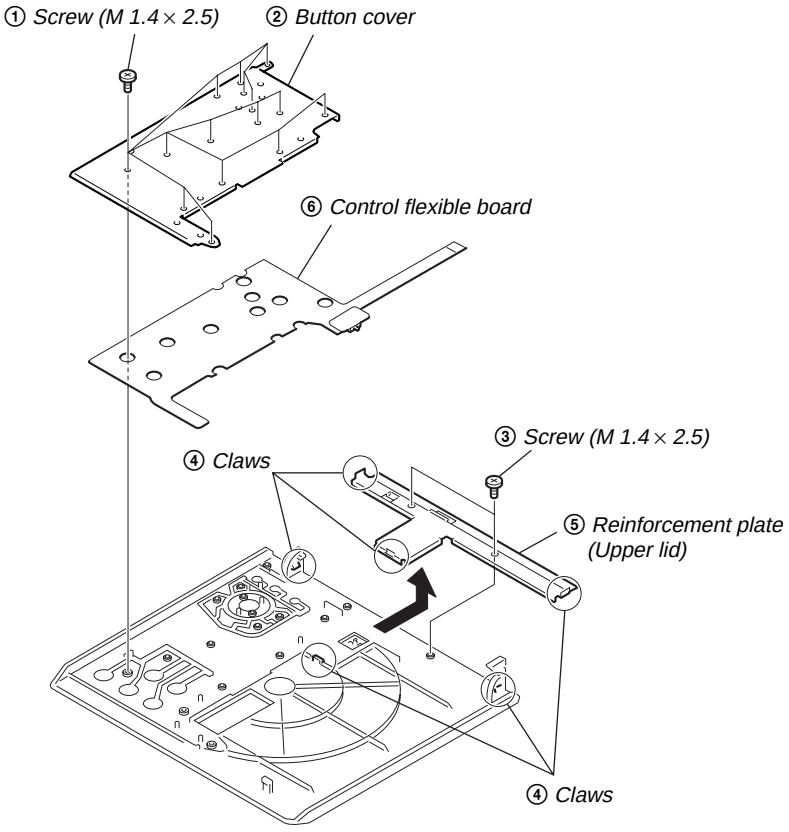
2-2. DVD MECHANISM (DVDM-D50), MAIN BOARD


⑪ DVD mechanism (DVDM-D50)
⑩ Flexible board
⑫ RF shield sheet
⑩ Flexible board
③ Connector
Be careful that the spindle and the compressed coil spring of the plunger solenoid PL901 can easily drop.
② Lock lever
⑩ FFC cable
⑨ REMOTE board
④ Flexible board
⑬ MAIN board
⑦ Screw (+PTP 2 × 6)
⑧ LCD assembly (LCD901)
⑥ Reflection sheet
⑤ Screw (+PTP 2 × 6)
① BATT detection arm
Cabinet (Lower)

2-3. UPPER LID ASSEMBLY

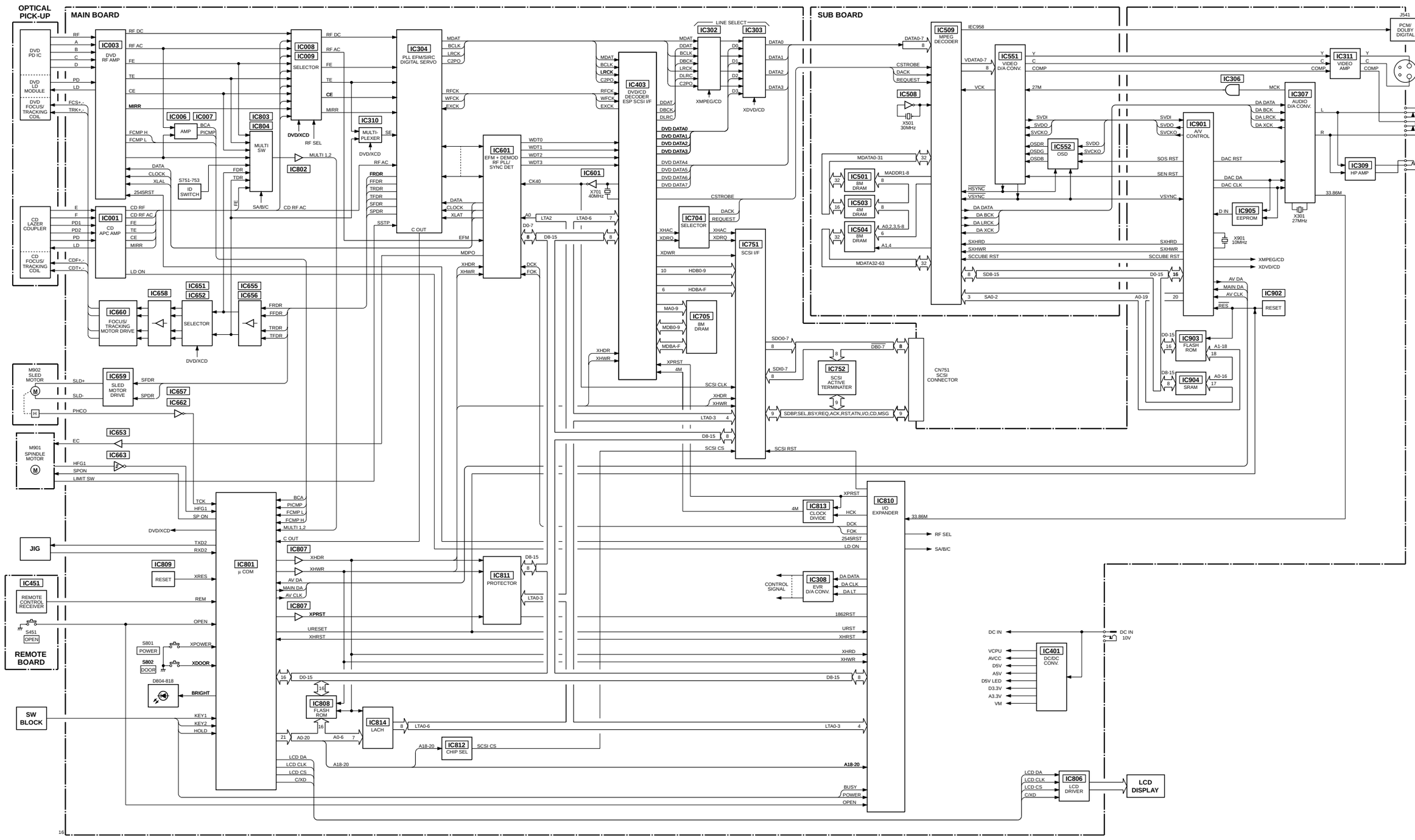


2-4. CONTROL FLEXIBLE BOARD

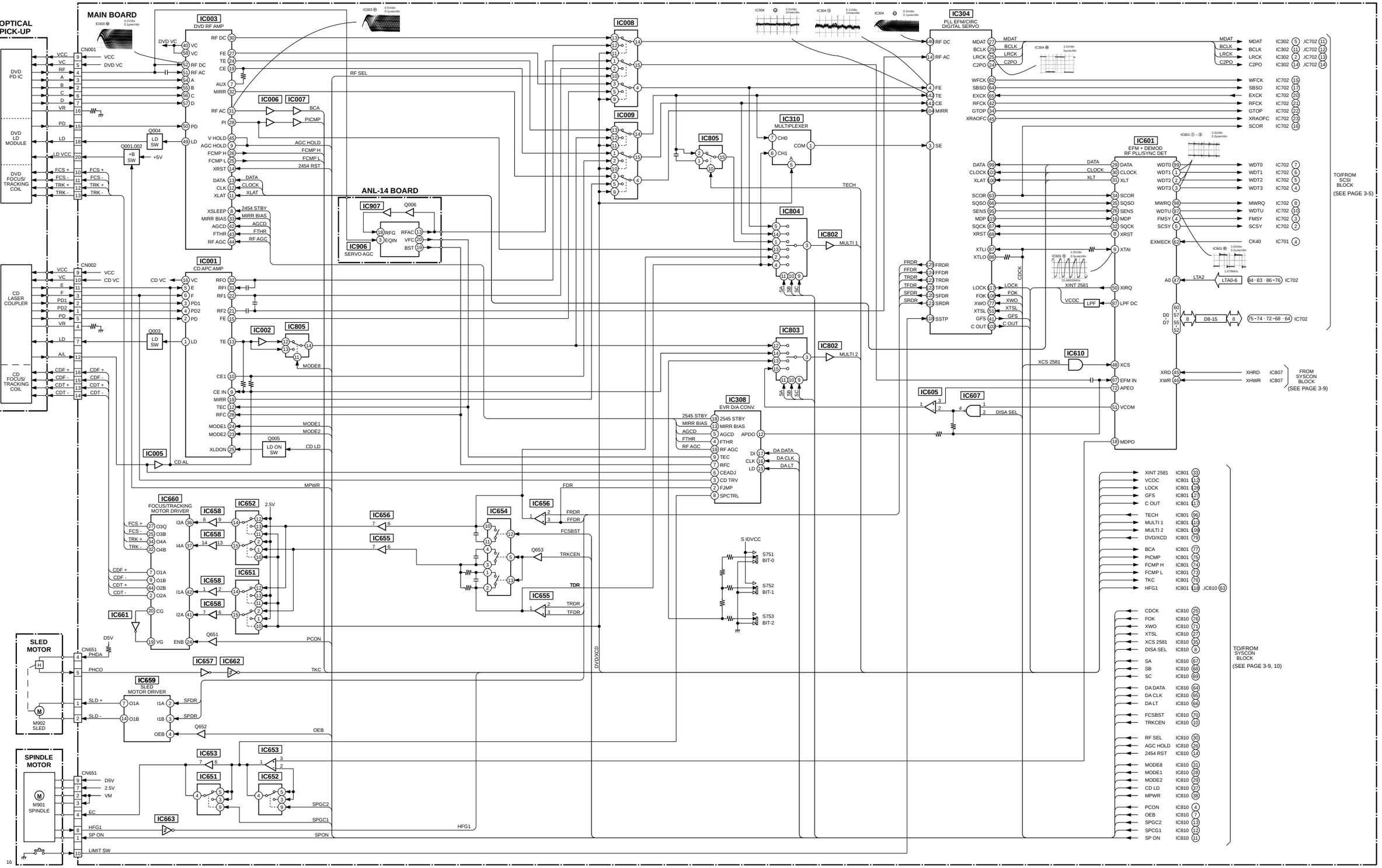


SECTION 3
BLOCK DIAGRAMS

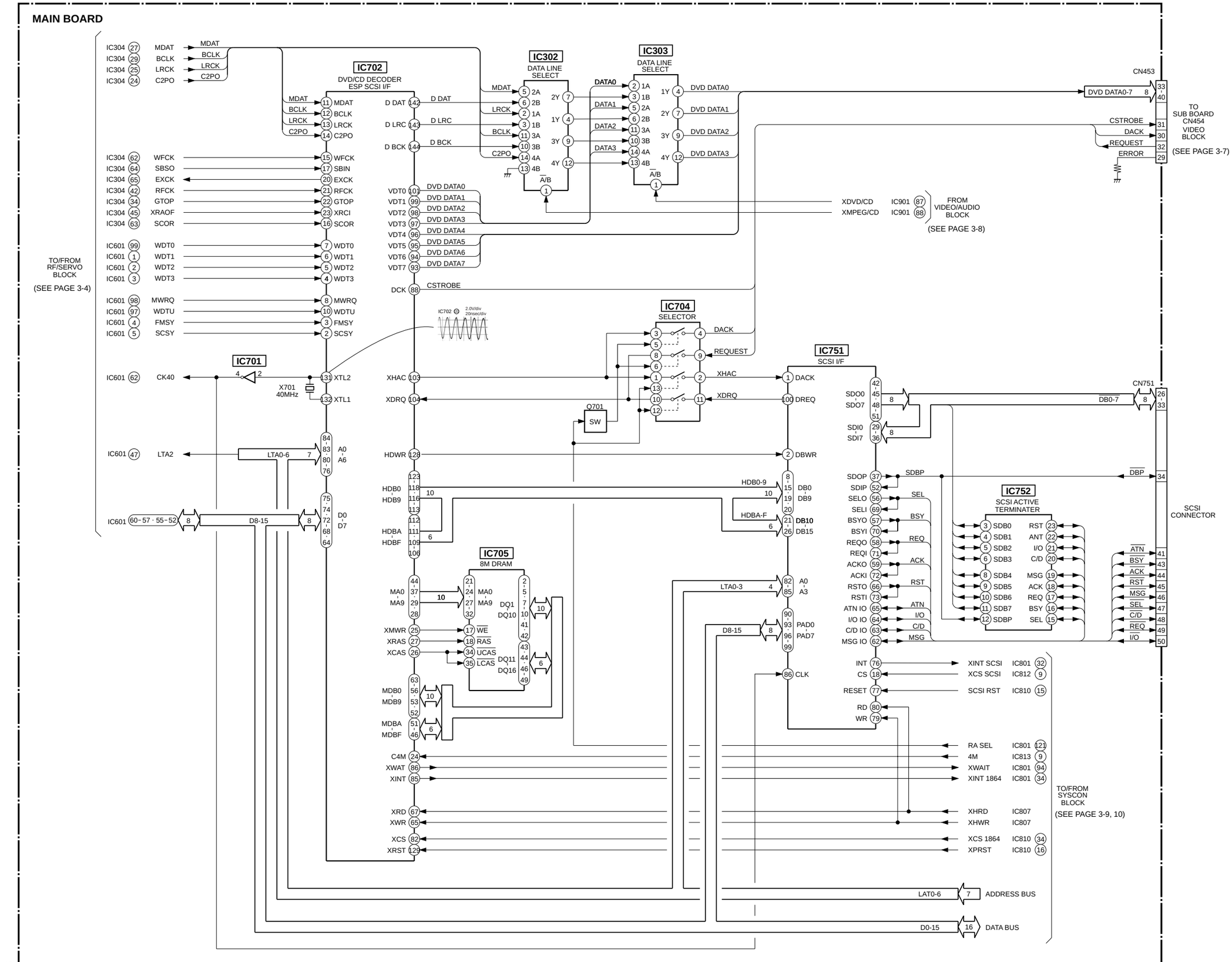
3-1. OVERALL BLOCK DIAGRAM



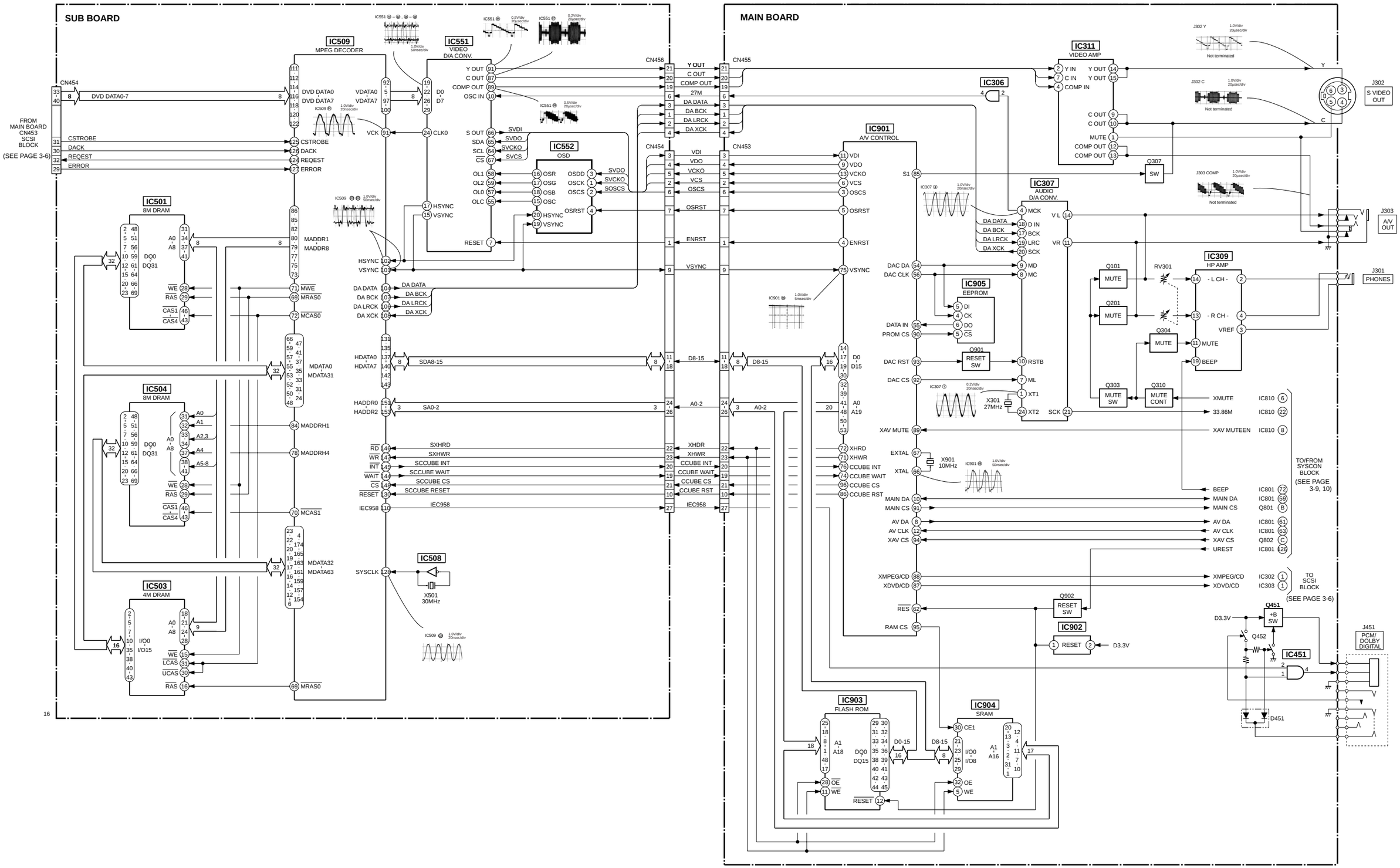
3-2. RF SERVO BLOCK DIAGRAM



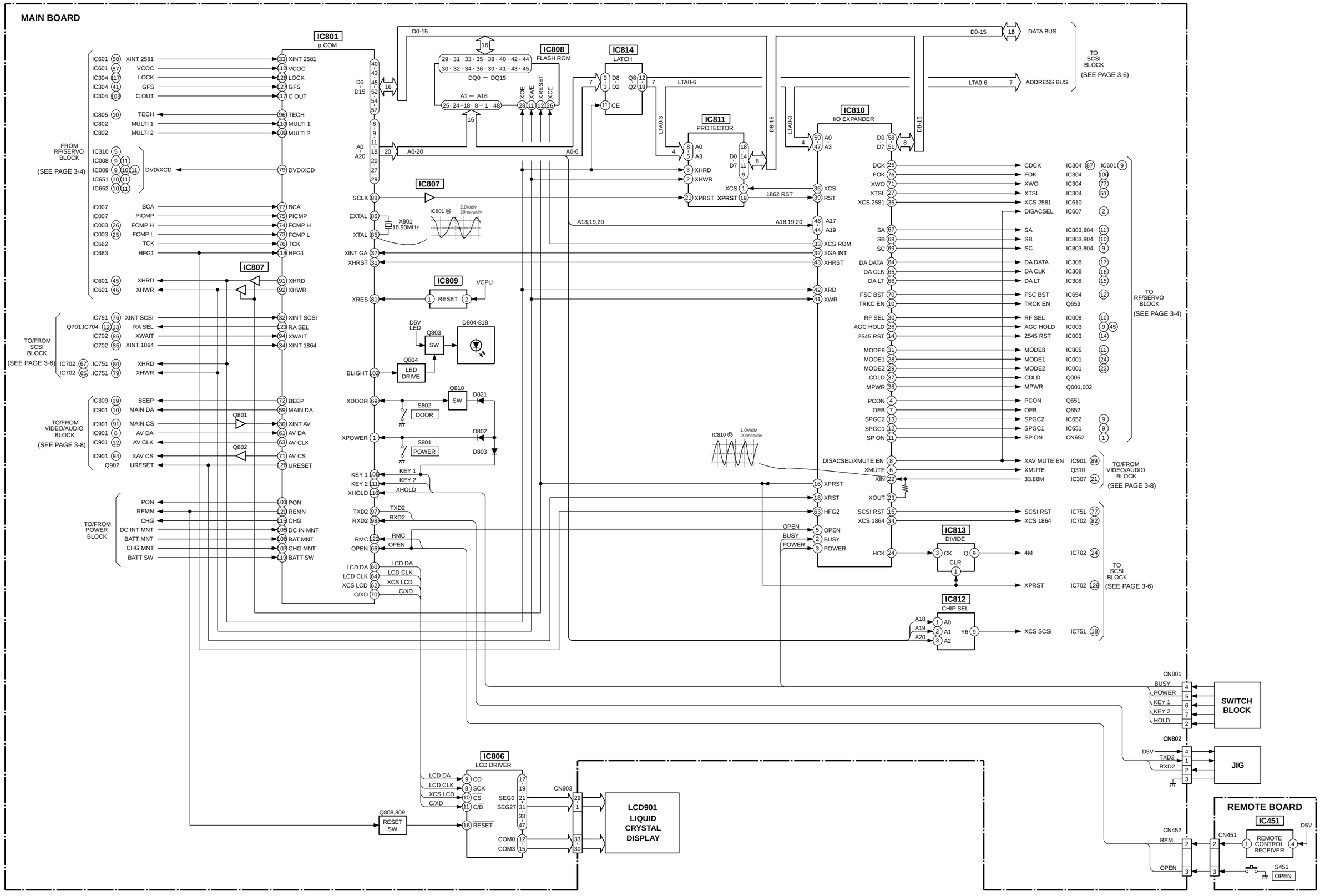
3-3. SCSI INTERFACE BLOCK DIAGRAM



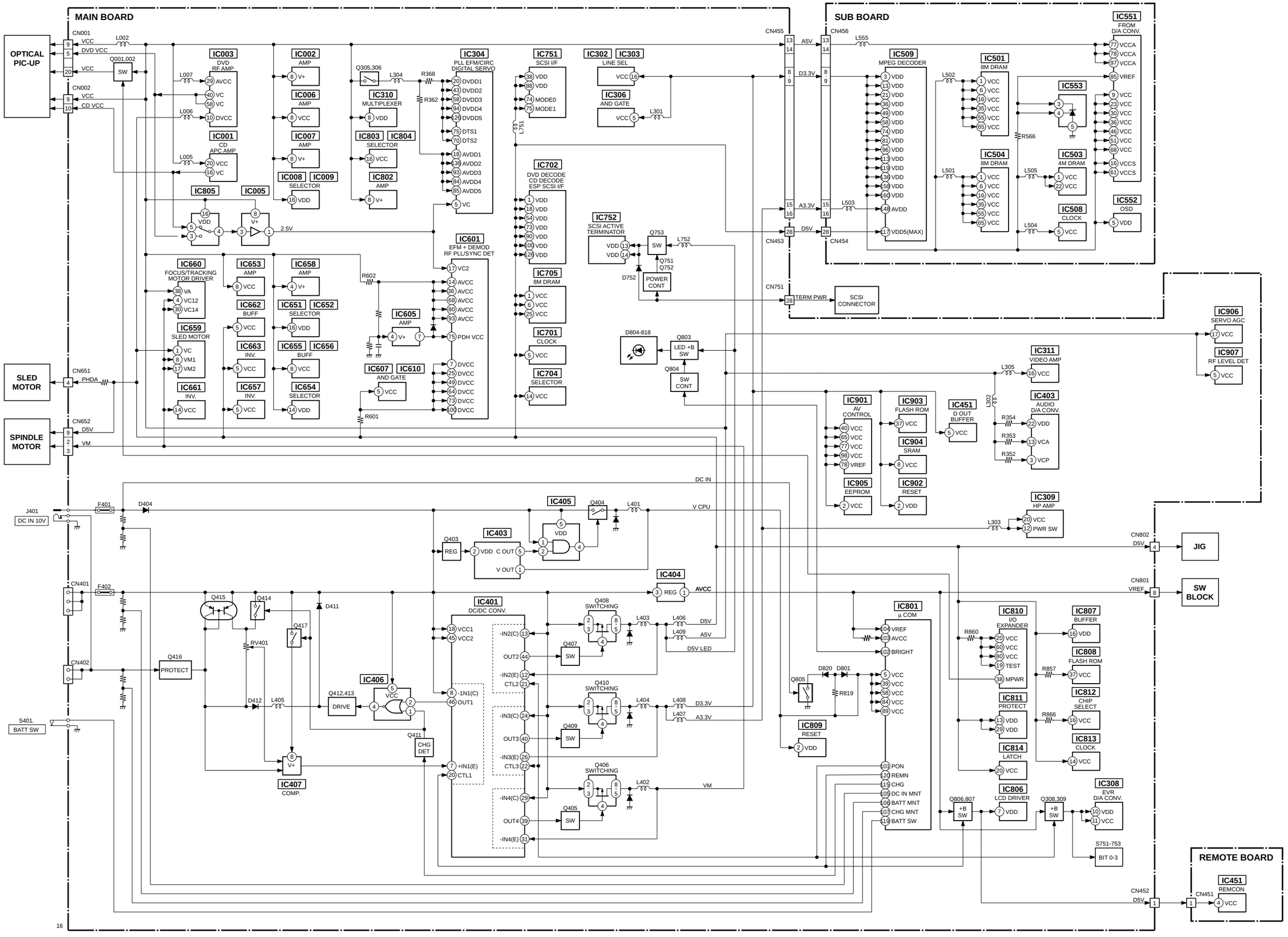
3-4. VIDEO/AUDIO BLOCK DIAGRAM



3-5. SYSTEM CONTROL BLOCK DIAGRAM



3-6. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)

- ▒▒▒: Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

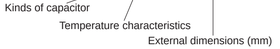
Transistor

Diode

(For schematic diagrams)

- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example C541 22U TA A L452 10UH 2520



- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination. Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → EDIT PB/XREC → PB/$\overline{REC}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line *
- : B– Line *
- : IN/OUT direction of (+,–) B LINE. *
- : adjustment for repair. *
- Circled numbers refer to waveforms. *

* Indicated by the color red.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

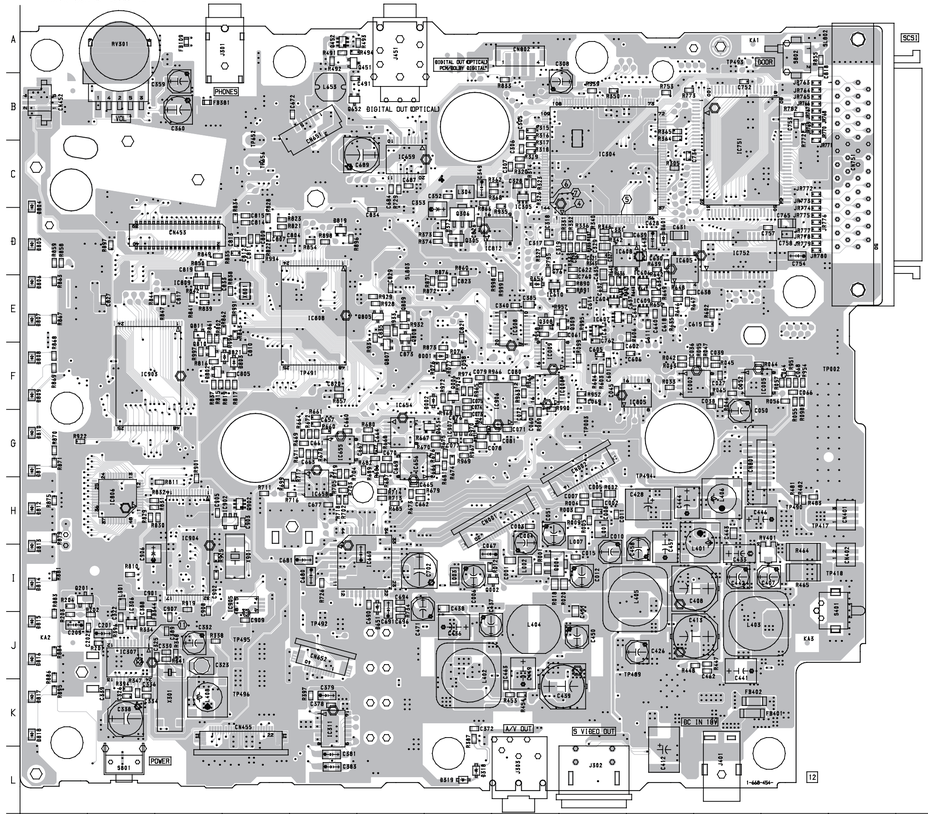
MAIN BOARD

CN001	H-8	D815	J-1	IC813	D-20
CN002	G-9	D816	J-1	IC814	D-22
CN401	H-13	D817	K-1	IC901	I-25
CN402	I-13	D818	K-1	IC902	H-4
CN452	B-1	D819	D-5	IC903	F-2
CN453	D-3	D820	F-22	IC904	H-3
CN455	K-4	D821	F-4	IC905	I-4
CN651	B-5			IC906	F-8
CN652	J-5	IC001	G-19	IC907	G-7
CN751	C-13	IC002	F-11		
CN801	G-11	IC003	H-20	J301	A-4
CN802	A-8	IC005	F-12	J302	L-9
CN803	H-26	IC006	G-20	J303	L-8
		IC007	G-21	J401	L-11
D001	F-7	IC008	F-8	J451	A-6
D002	F-7	IC009	F-8		
D101	A-25	IC302	C-26	Q001	I-21
D102	A-25	IC303	C-25	Q002	I-8
D103	L-22	IC304	C-9	Q003	H-18
D104	K-22	IC306	J-2	Q004	I-8
D201	B-24	IC307	J-2	Q005	G-18
D202	B-24	IC308	E-8	Q006	F-7
D203	L-22	IC309	B-25	Q101	K-26
D204	L-22	IC310	C-21	Q201	I-1
D302	B-24	IC311	K-5	Q303	B-26
D303	B-24	IC401	J-19	Q304	B-26
D304	L-18	IC403	H-17	Q305	D-7
D305	L-18	IC404	H-16	Q306	D-7
D308	L-18	IC405	H-17	Q307	K-18
D309	L-18	IC406	I-18	Q308	E-8
D312	L-18	IC407	I-16	Q309	E-9
D313	L-18	IC451	A-22	Q403	H-18
D318	L-7	IC601	E-18	Q404	H-17
D319	L-7	IC605	D-10	Q405	K-21
D320	K-19	IC607	E-9	Q406	J-21
D321	K-19	IC610	E-8	Q407	J-17
D322	C-24	IC651	H-23	Q408	J-17
D401	K-18	IC652	H-22	Q409	I-21
D404	K-16	IC653	G-22	Q410	J-21
D405	H-18	IC654	G-6	Q411	I-17
D406	H-17	IC655	G-5	Q412	J-17
D407	H-17	IC656	E-6	Q413	J-18
D408	K-21	IC657	B-23	Q414	I-17
D409	J-16	IC658	H-5	Q415	I-17
D410	J-20	IC659	C-6	Q416	I-16
D411	J-17	IC660	I-6	Q417	I-17
D412	I-17	IC661	I-22	Q451	A-5
D451	A-22	IC662	C-24	Q452	A-5
D601	D-10	IC663	J-23	Q651	I-23
D652	I-21	IC701	C-19	Q652	B-5
D653	I-22	IC702	C-18	Q653	G-7
D751	D-16	IC704	D-19	Q701	D-19
D752	D-16	IC705	B-16	Q751	D-16
D801	F-23	IC751	C-11	Q752	D-16
D802	F-3	IC752	D-11	Q753	D-16
D803	F-4	IC801	E-24	Q801	E-22
D804	C-1	IC802	C-23	Q802	F-25
D805	D-1	IC803	C-22	Q803	D-26
D806	E-1	IC804	C-23	Q804	D-26
D807	E-1	IC805	F-10	Q805	E-6
D808	F-1	IC806	H-2	Q806	F-22
D809	F-1	IC807	E-25	Q807	F-6
D810	G-1	IC808	E-5	Q808	E-6
D811	G-1	IC809	E-3	Q809	E-6
D812	H-1	IC810	E-21	Q810	F-3
D813	H-1	IC811	E-26	Q811	E-3
D814	I-1	IC812	D-8	Q901	J-25

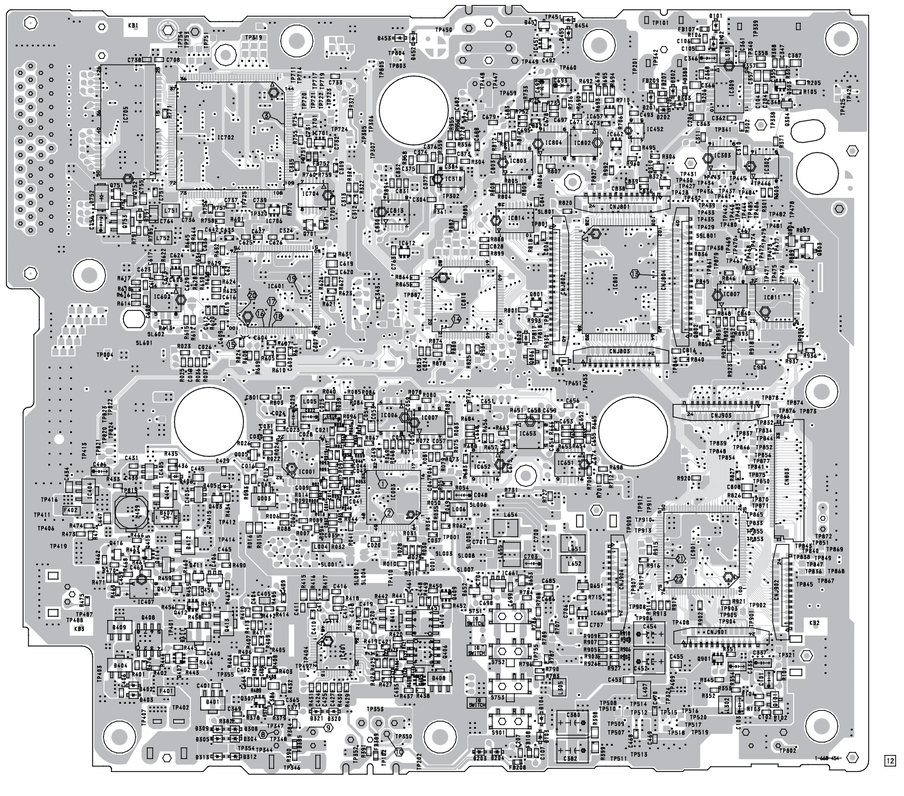
MAIN PRINTED WIRING BOARD

There are few cases that the part printed on this diagram isn't mounted in this model.

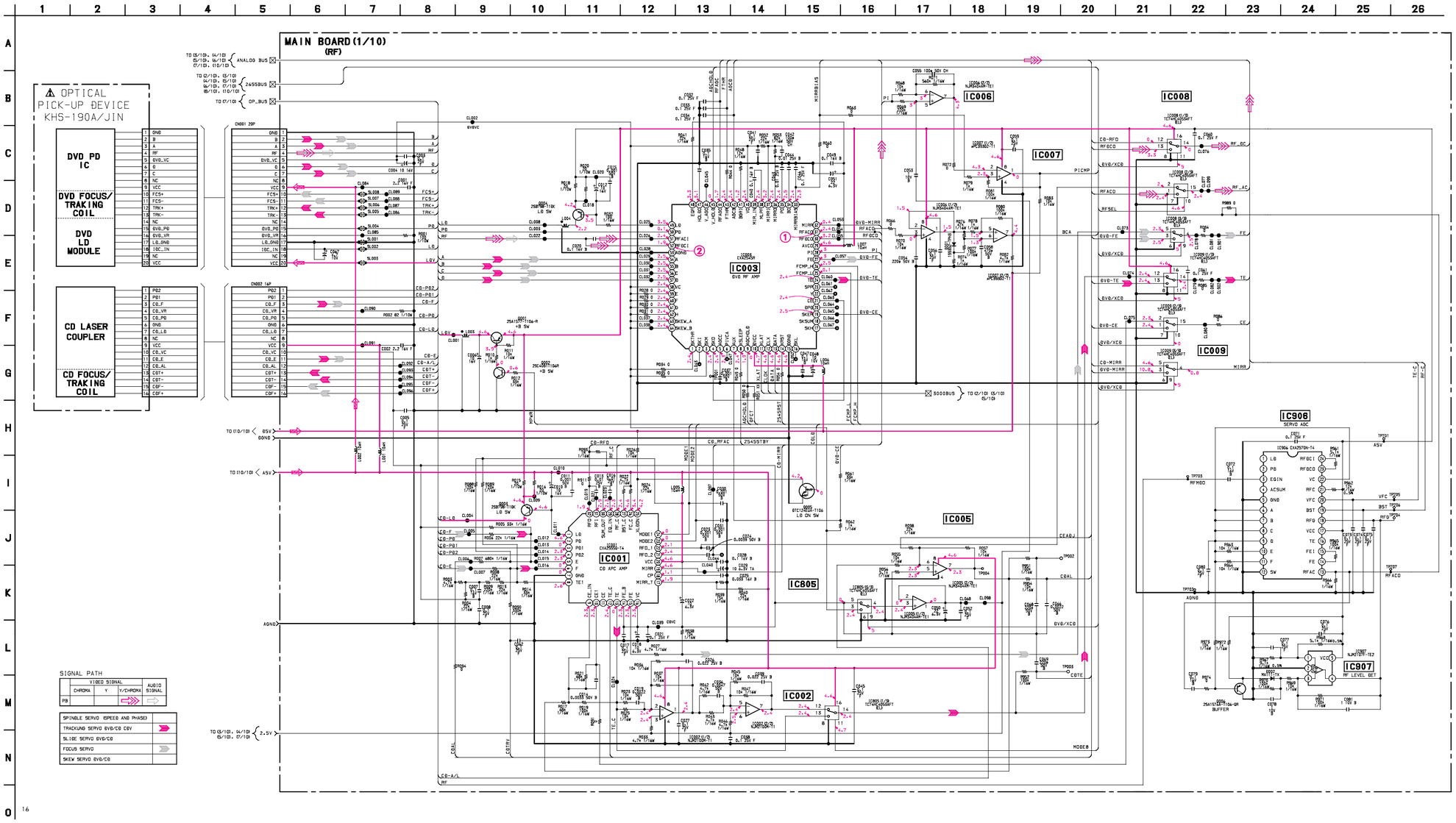
MAIN BOARD (SIDE A)



MAIN BOARD (SIDE B)

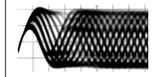


MAIN (RF) SCHEMATIC DIAGRAM

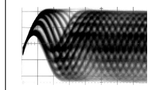


MAIN BOARD (1/10)

① IC003 ㉛ 0.5V/div 0.1μsec/div



② IC003 ㉜ 0.2V/div 0.1μsec/div

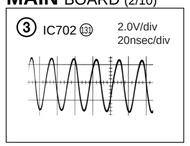


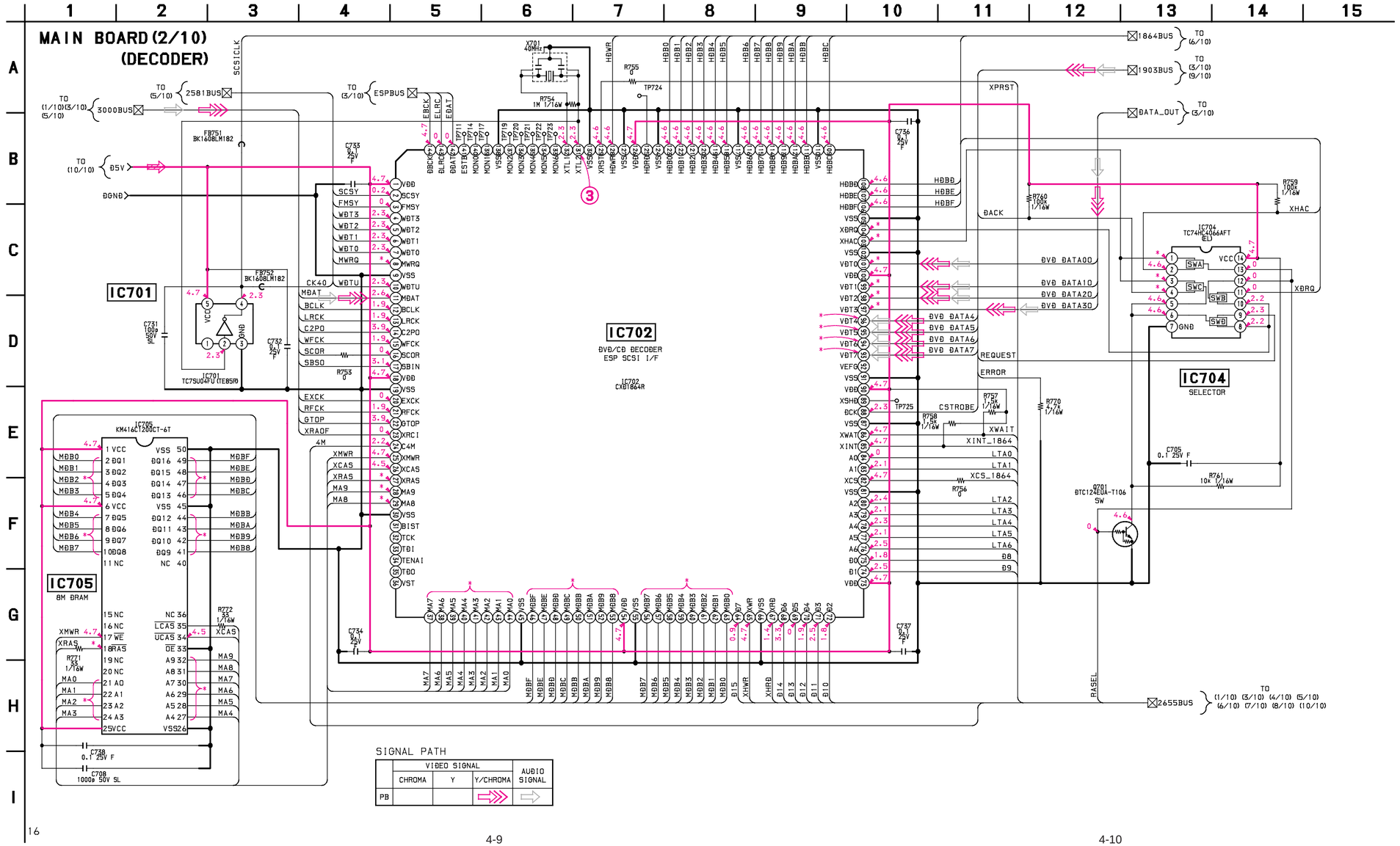
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN (DECODER) SCHEMATIC DIAGRAM

• See page 4-2 for MAIN BOARD printed wiring board.

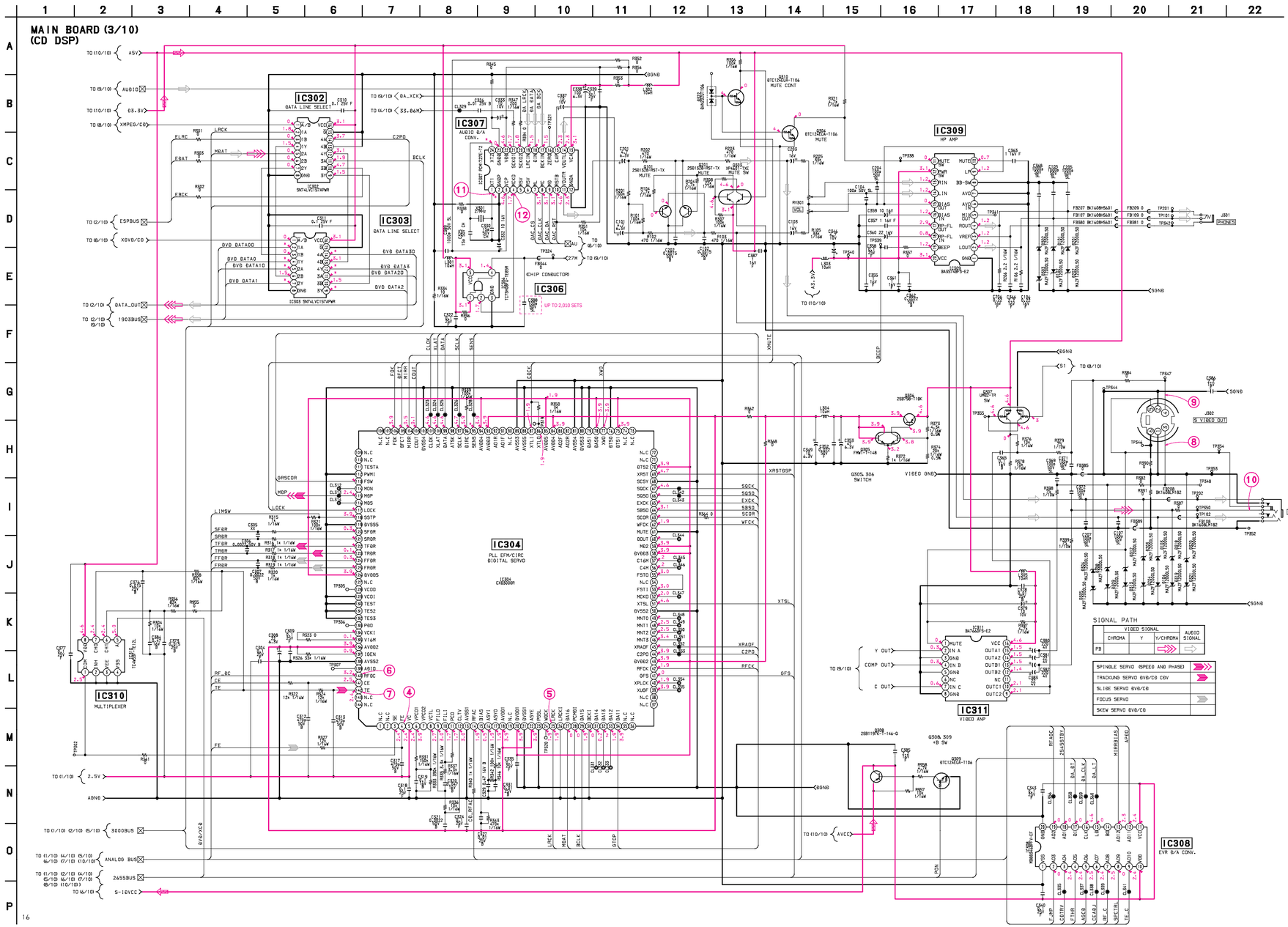
MAIN BOARD (2/10)



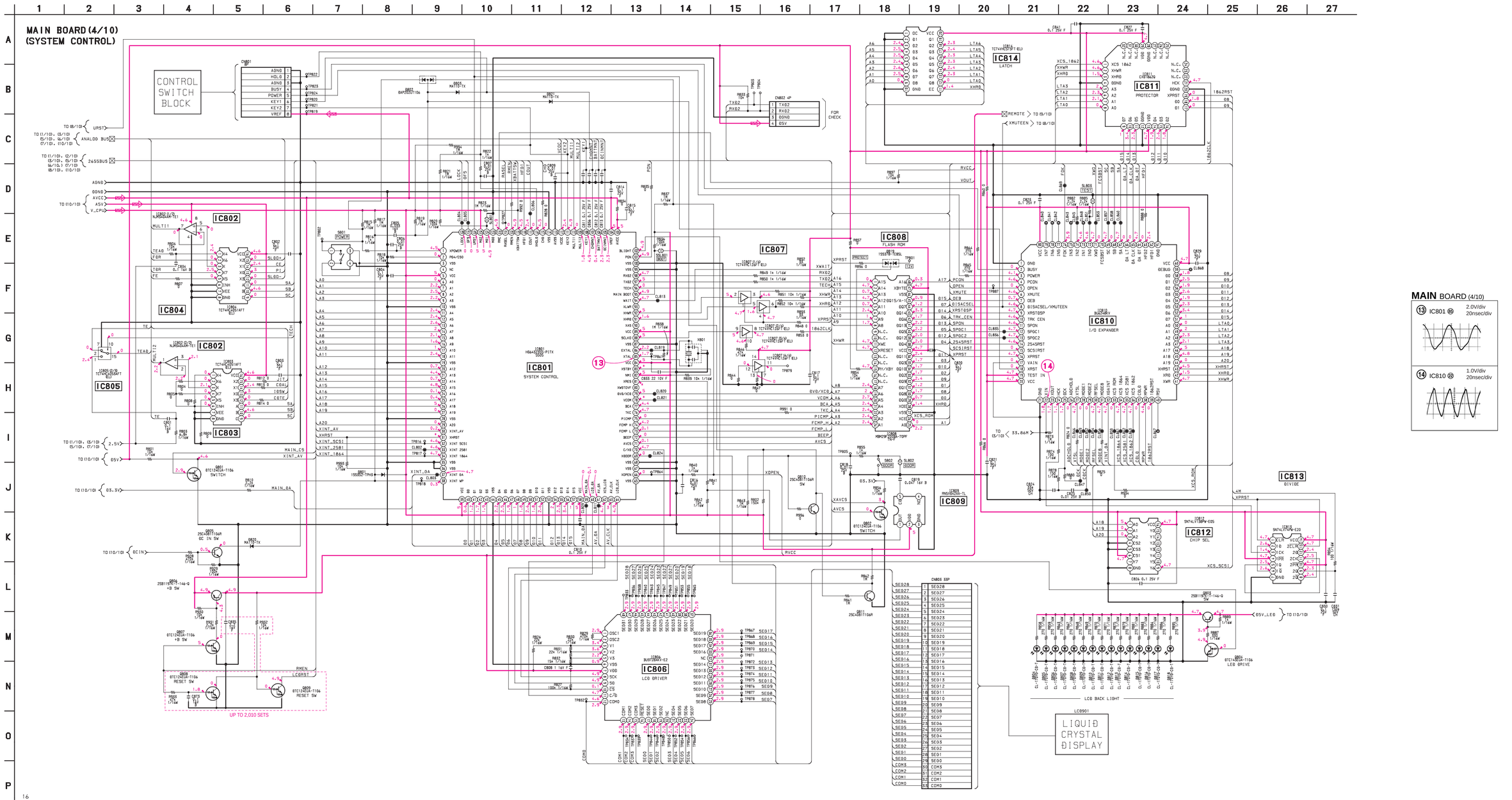


DECODER
MAIN (2/10)

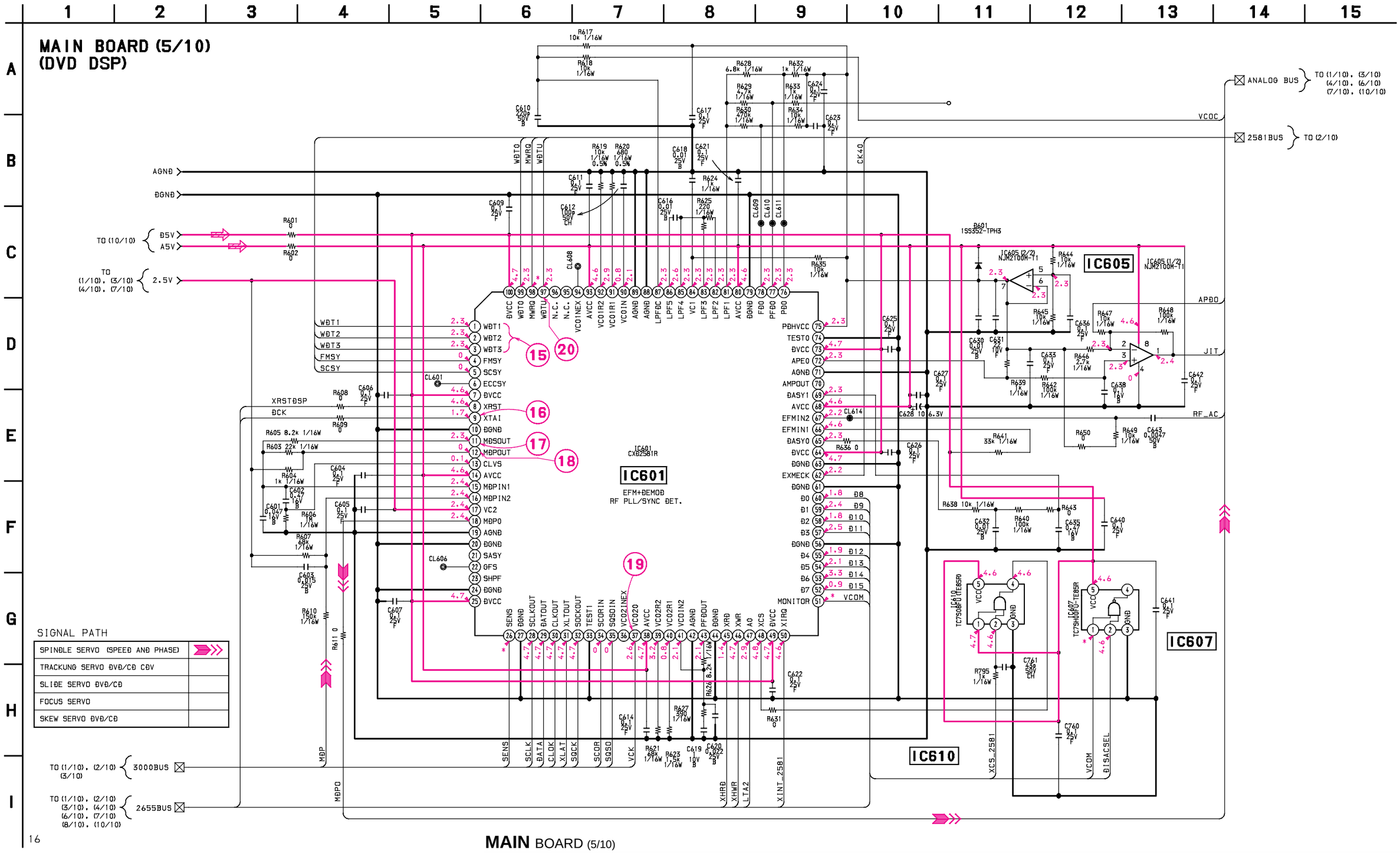
MAIN (CD DSP) SCHEMATIC DIAGRAM • See page 4-2 for MAIN BOARD printed wiring board.



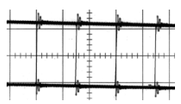
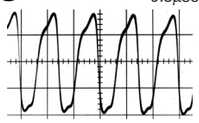
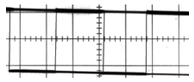
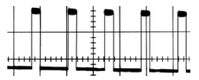
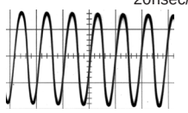
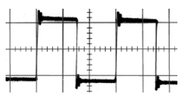
MAIN (SYSTEM CONTROL) SCHEMATIC DIAGRAM • See page 4-2 for MAIN BOARD printed wiring board.



MAIN (DVD DSP) SCHEMATIC DIAGRAM • See page 4-2 for MAIN BOARD printed wiring board.

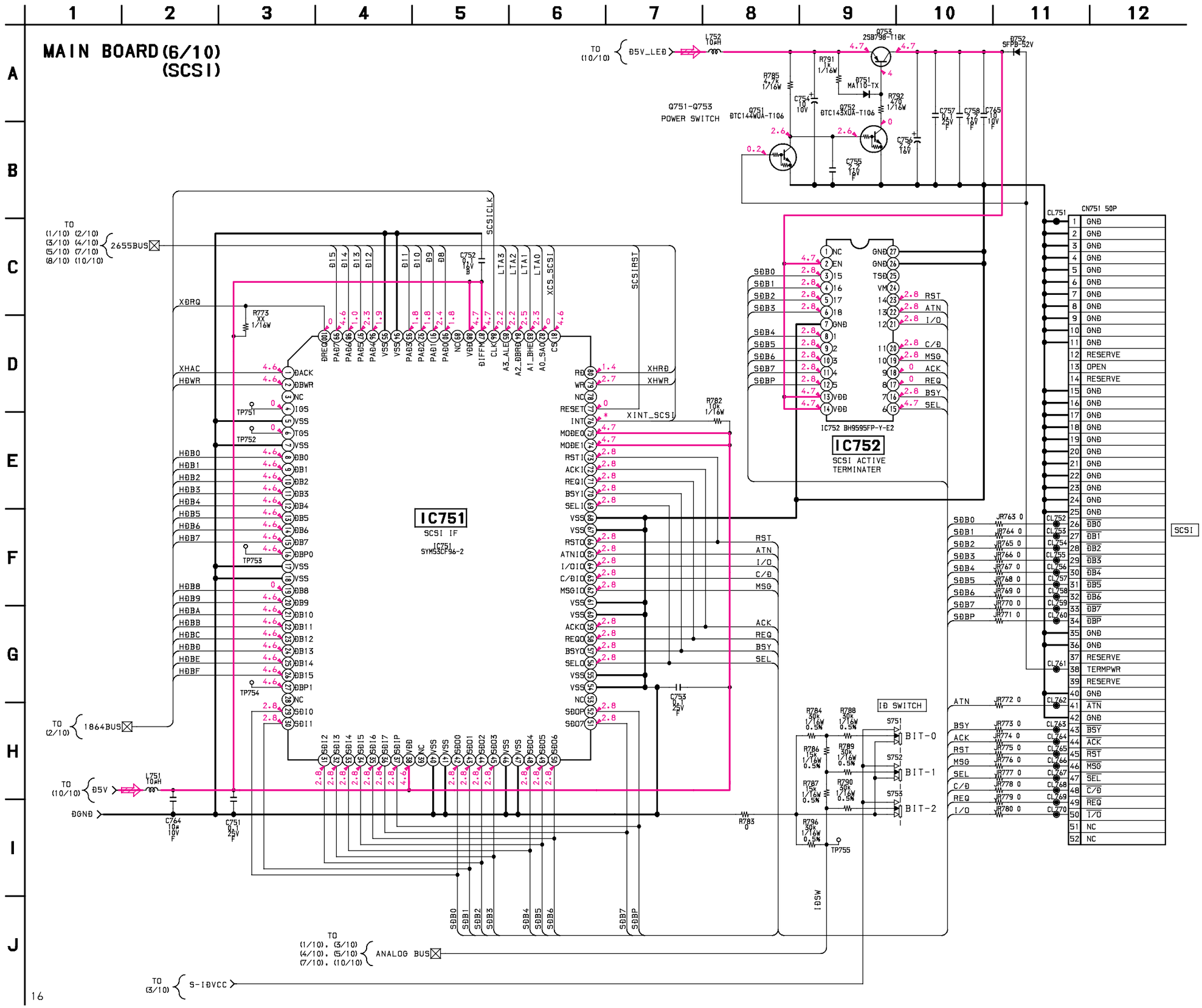


MAIN BOARD (5/10)

(15) IC601 ① – ③	2.0V/div 0.2µsec/div	
(16) IC601 ⑨	1.0V/div 0.5µsec/div	 33.86835MHz
(17) IC601 ⑪	2.0V/div 0.5µsec/div	
(18) IC601 ⑫	1.0V/div 0.5µsec/div	
(19) IC601 ㊲	2.0V/div 20nsec/div	 53.22MHz
(20) IC601 ㊼	2.0V/div 0.2µsec/div	 1.679MHz

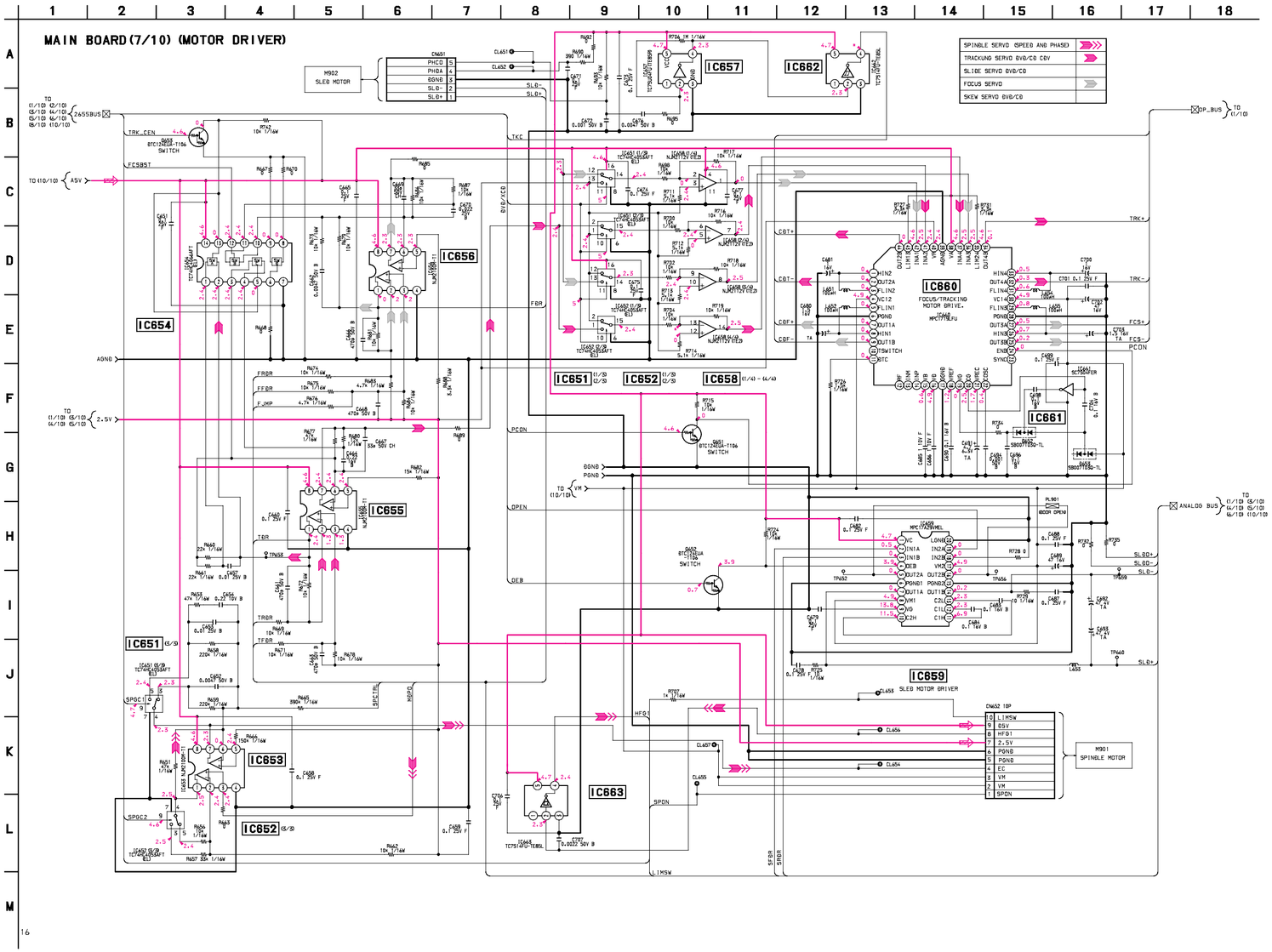
MAIN (SCSI) SCHEMATIC DIAGRAM

• See page 4-2 for MAIN BOARD printed wiring board.



MAIN (MOTOR DRIVER) SCHEMATIC DIAGRAM

• See page 4-2 for MAIN BOARD printed wiring board.

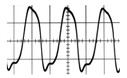


MOTOR DRIVER
MAIN (7/10)

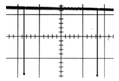
MAIN (AV CONTROL) SCHEMATIC DIAGRAM • See page 4-2 for MAIN BOARD printed wiring board.

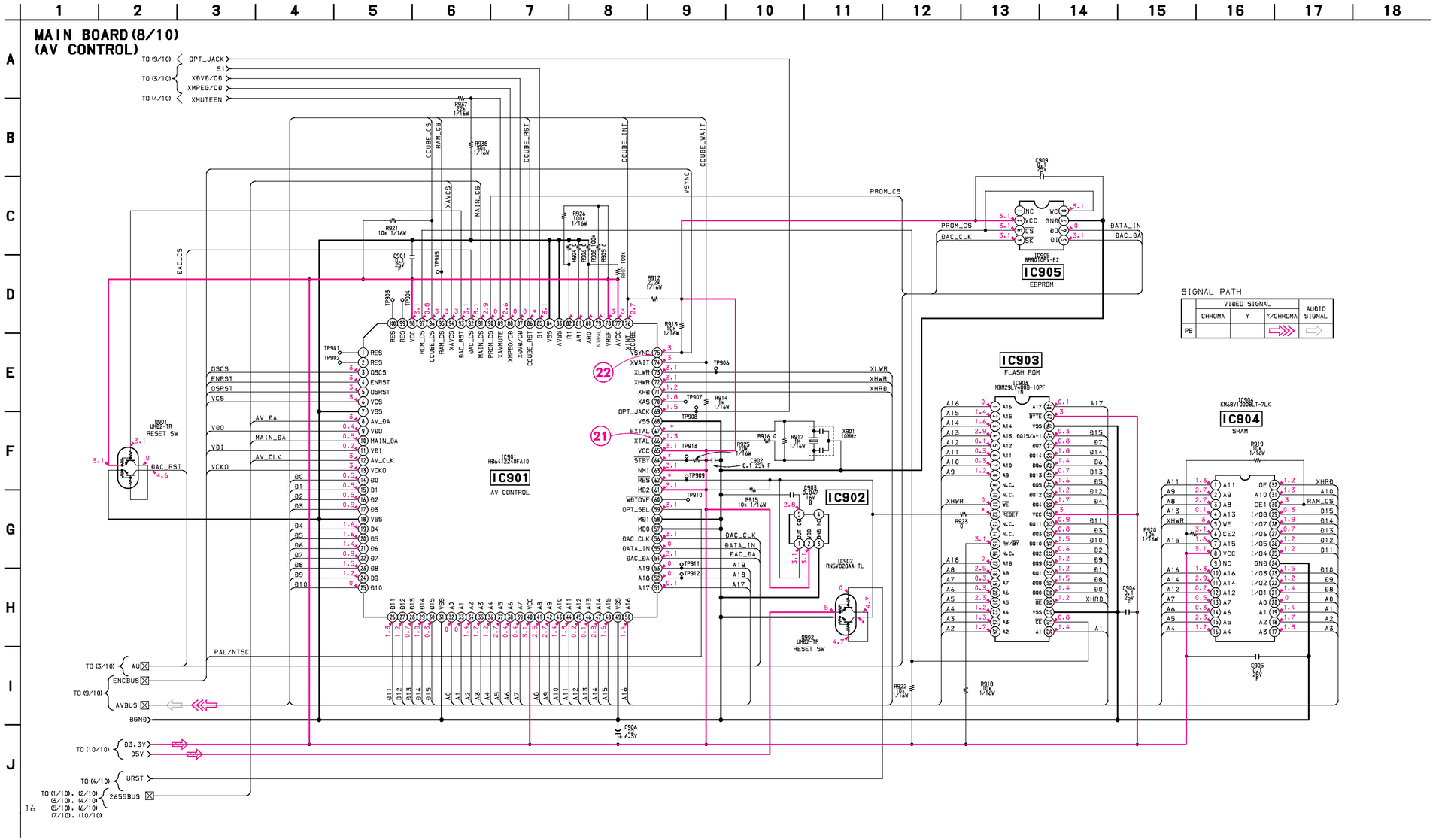
MAIN BOARD (8/10)

21 IC901 66 — 1.0V/div 50nsec/div



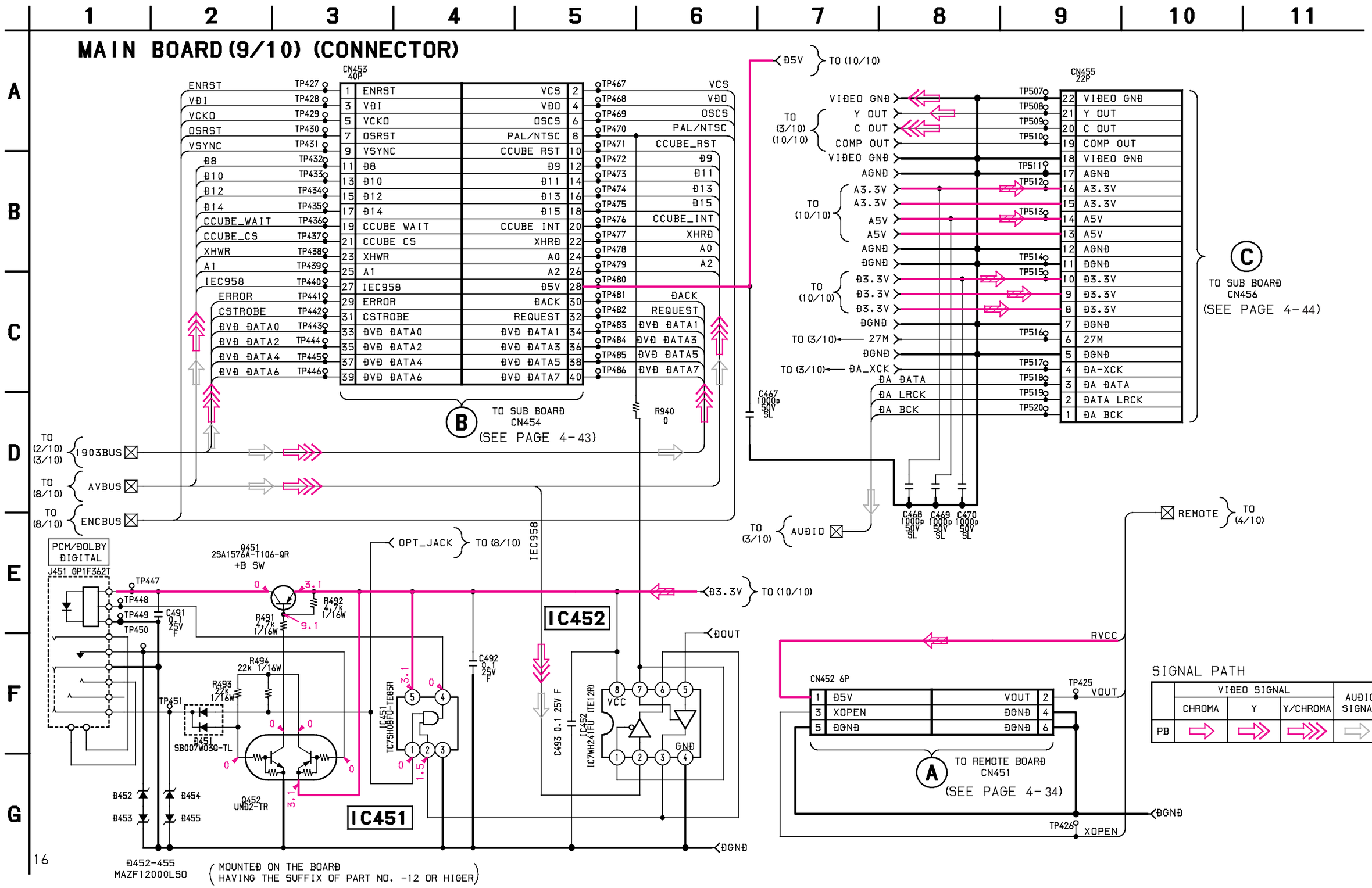
22 IC901 75 — 1.0V/div 5msec/div





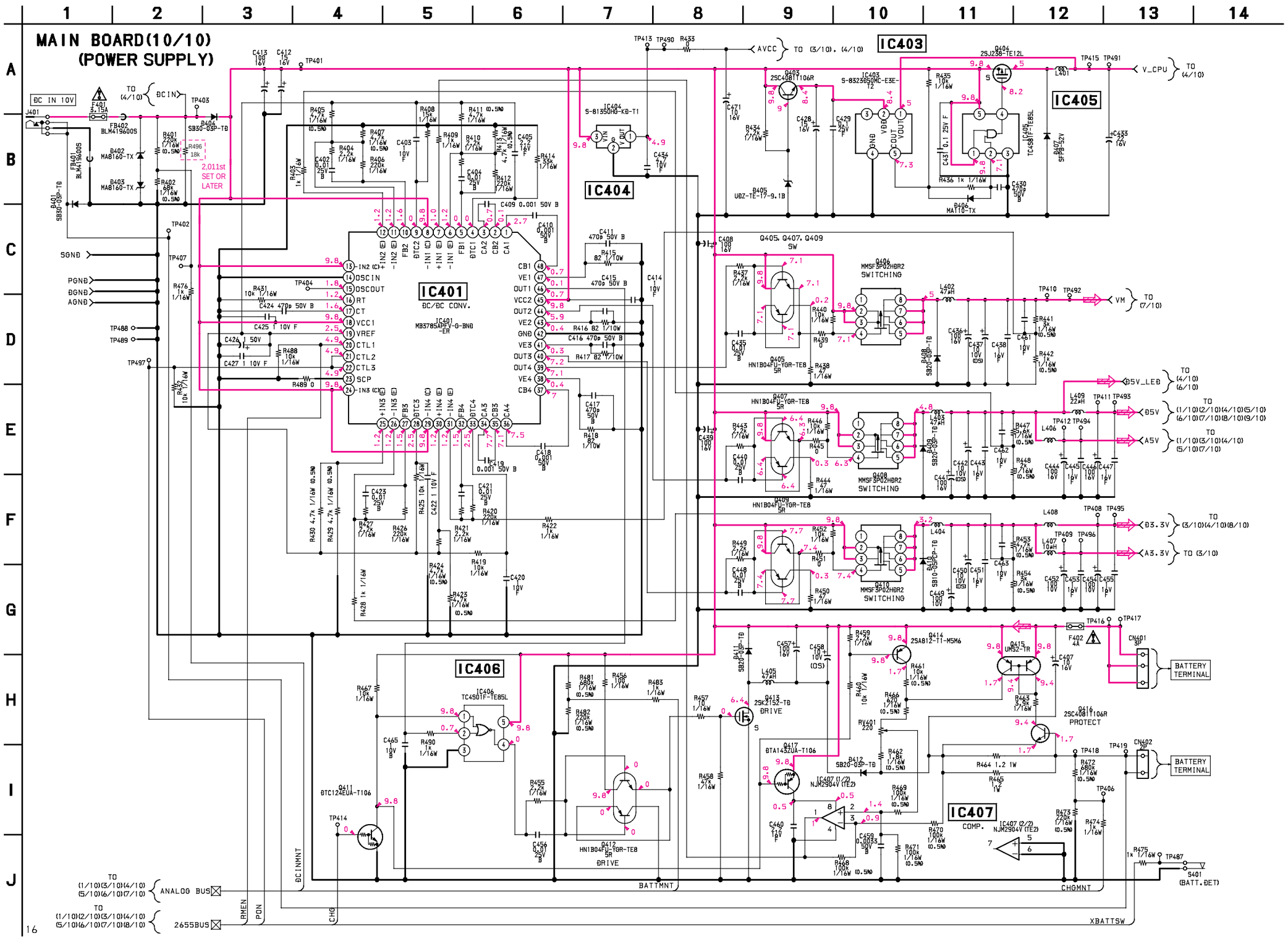
MAIN (CONNECTOR) SCHEMATIC DIAGRAM

• See page 4-2 for MAIN BOARD printed wiring board.



MAIN (POWER SUPPLY) SCHEMATIC DIAGRAM

• See page 4-2 for MAIN BOARD printed wiring board.

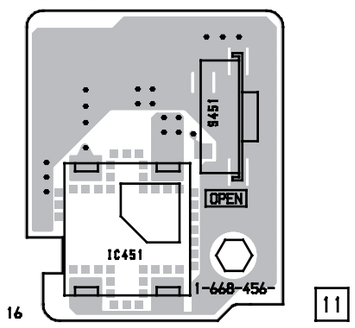


Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

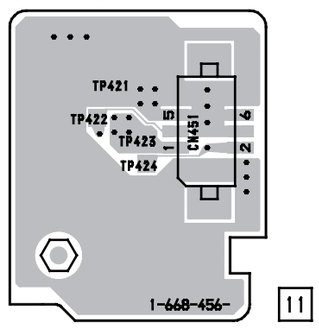
REMOTE PRINTED WIRING BOARD

There are few cases that the part printed on this diagram isn't mounted in this model.

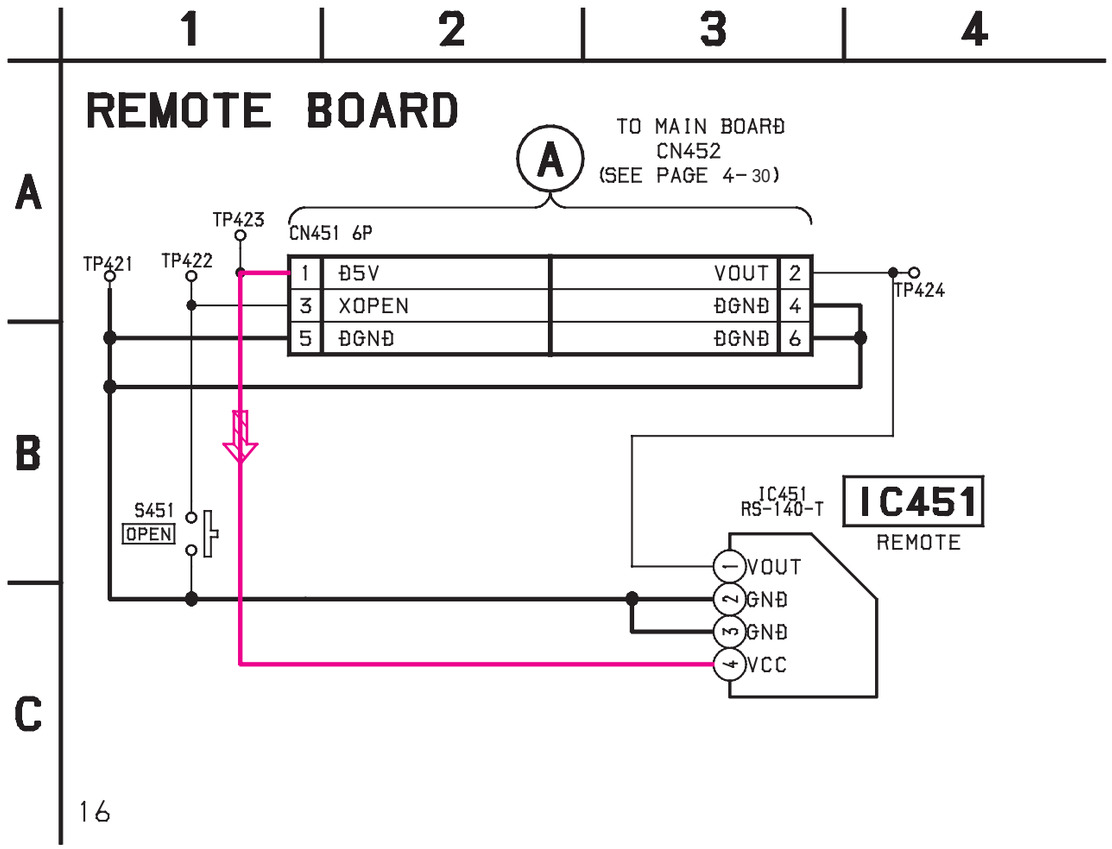
REMOTE BOARÐ
(SIÐE A)



REMOTE BOARÐ
(SIÐE B)



REMOTE SCHEMATIC DIAGRAM



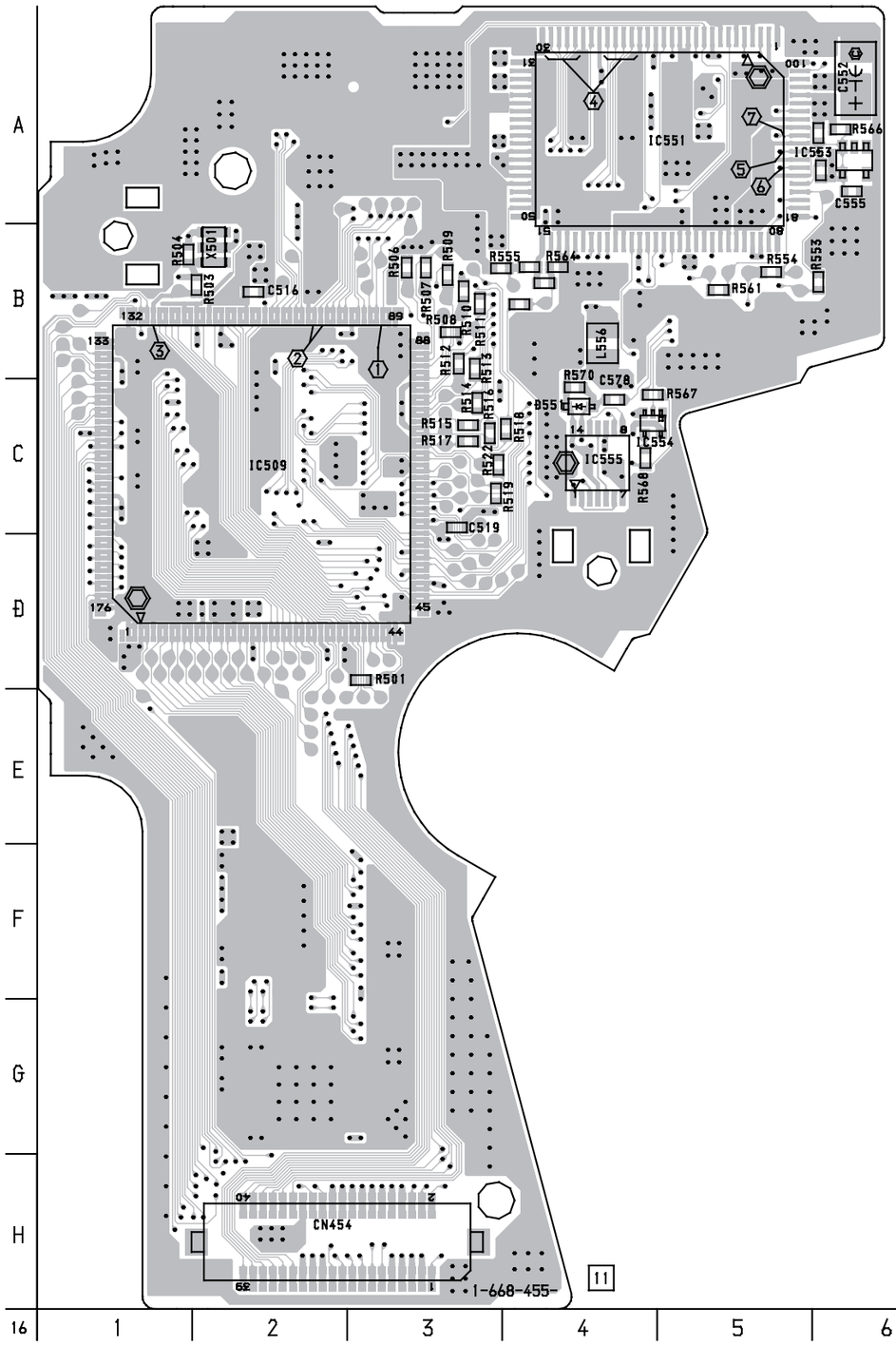
SUB PRINTED WIRING BOARD

There are few cases that the part printed on this diagram isn't mounted in this model.

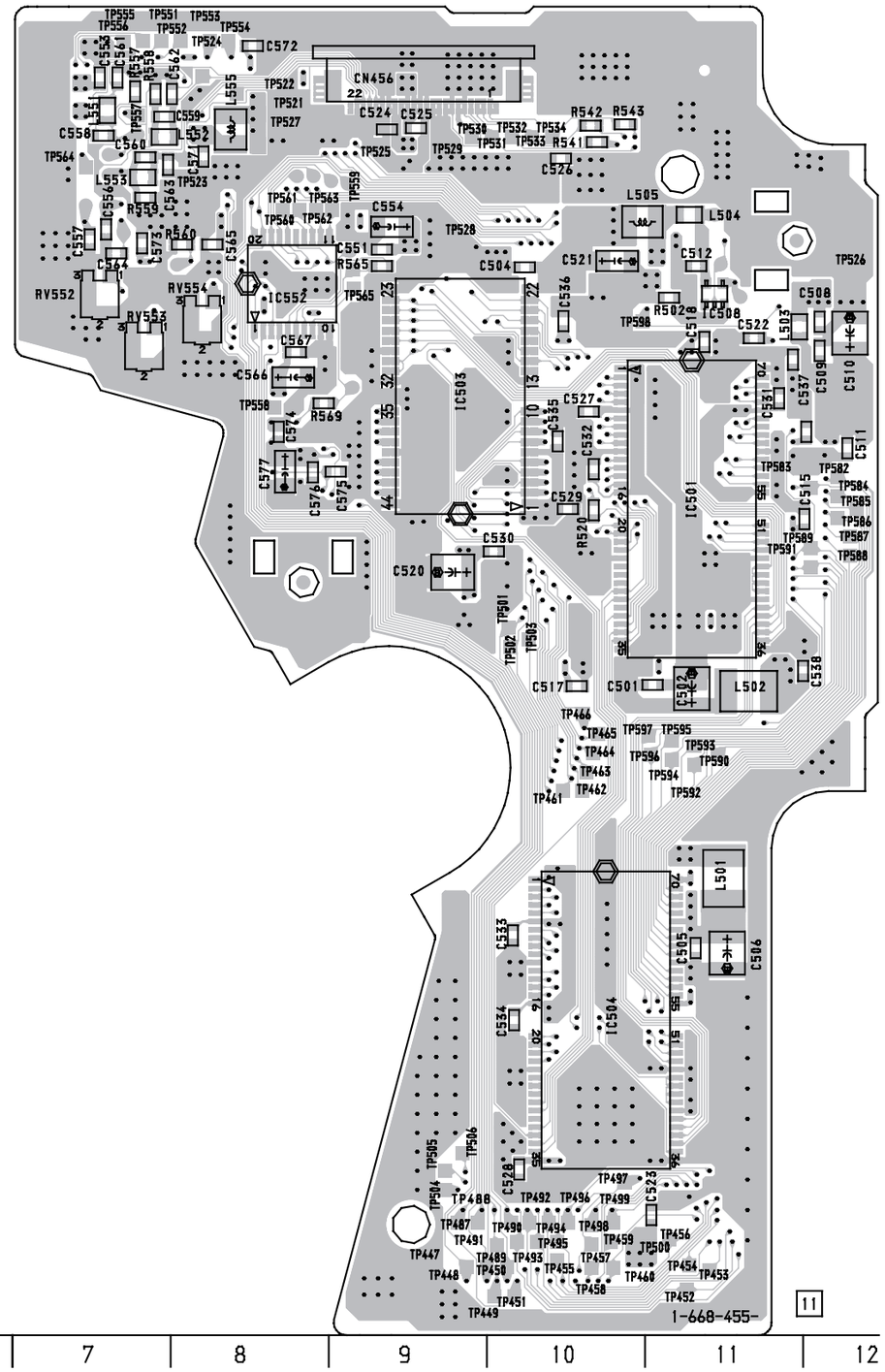
SUB BOARD

CN454	H-2
CN456	A-9
D551	C-4
IC501	C-11
IC503	C-9
IC504	F-10
IC508	B-11
IC509	C-2
IC551	A-4
IC552	B-8
IC553	A-6
IC555	C-4

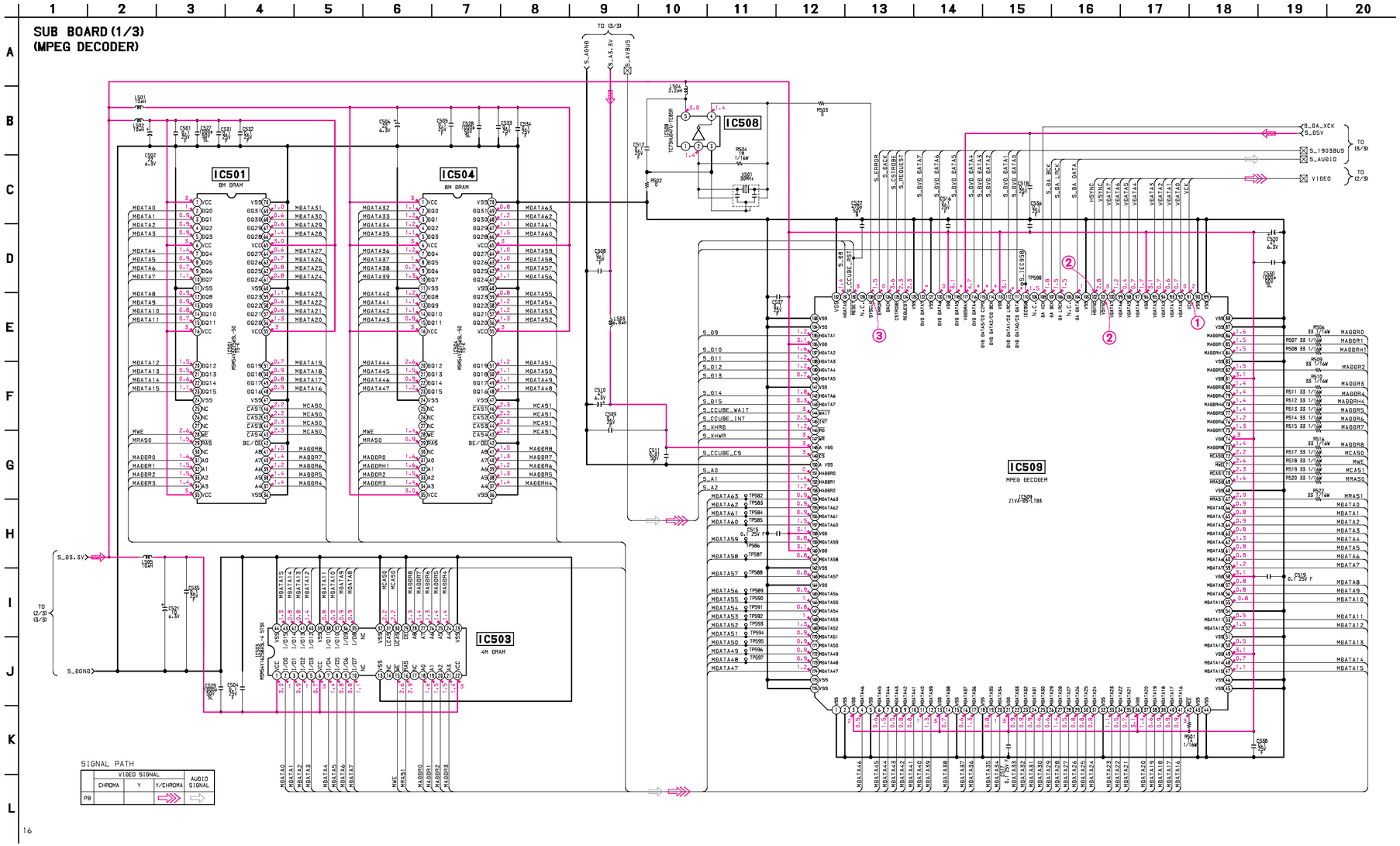
SUB BOARD (SIDE A)



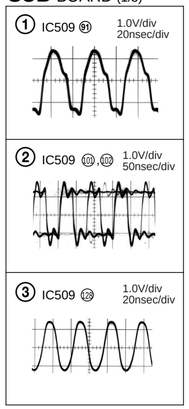
SUB BOARD (SIDE B)



SUB (MPEG DECODER) SCHEMATIC DIAGRAM



SUB BOARD (1/3)

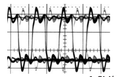


SUB (VIDEO D/A CONVERTER) SCHEMATIC DIAGRAM

• See page 4-35 for SUB BOARD printed wiring board.

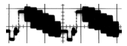
SUB BOARD (2/3)

④ IC551 ⑲ – ㉒ , ㉖ – ㉙

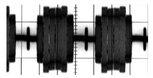


1.0V/div
50nsec/div

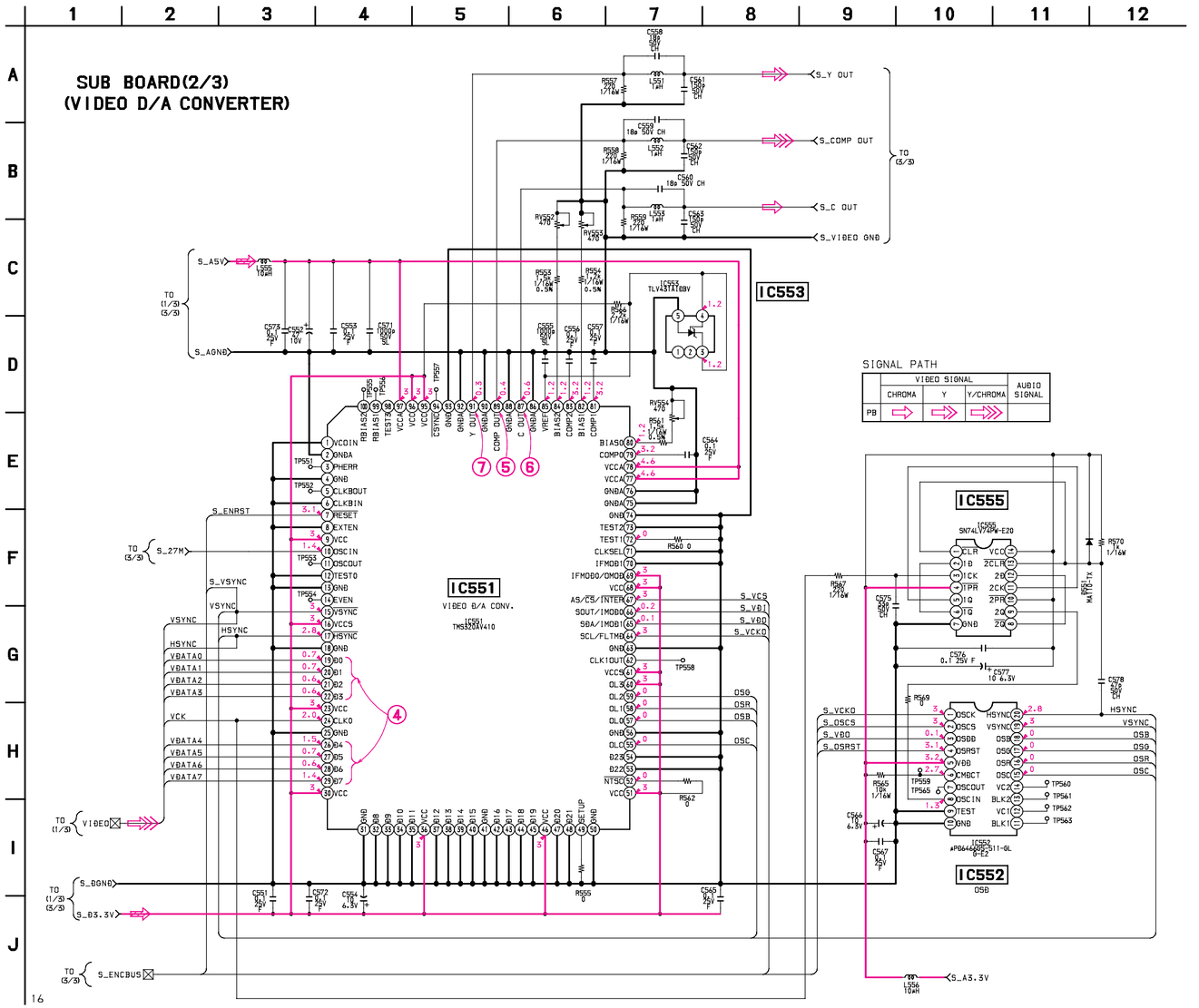
⑤ IC551 ㉙ 0.5V/div 20µsec/div



⑥ IC551 ㉗ 0.2V/div 20µsec/div



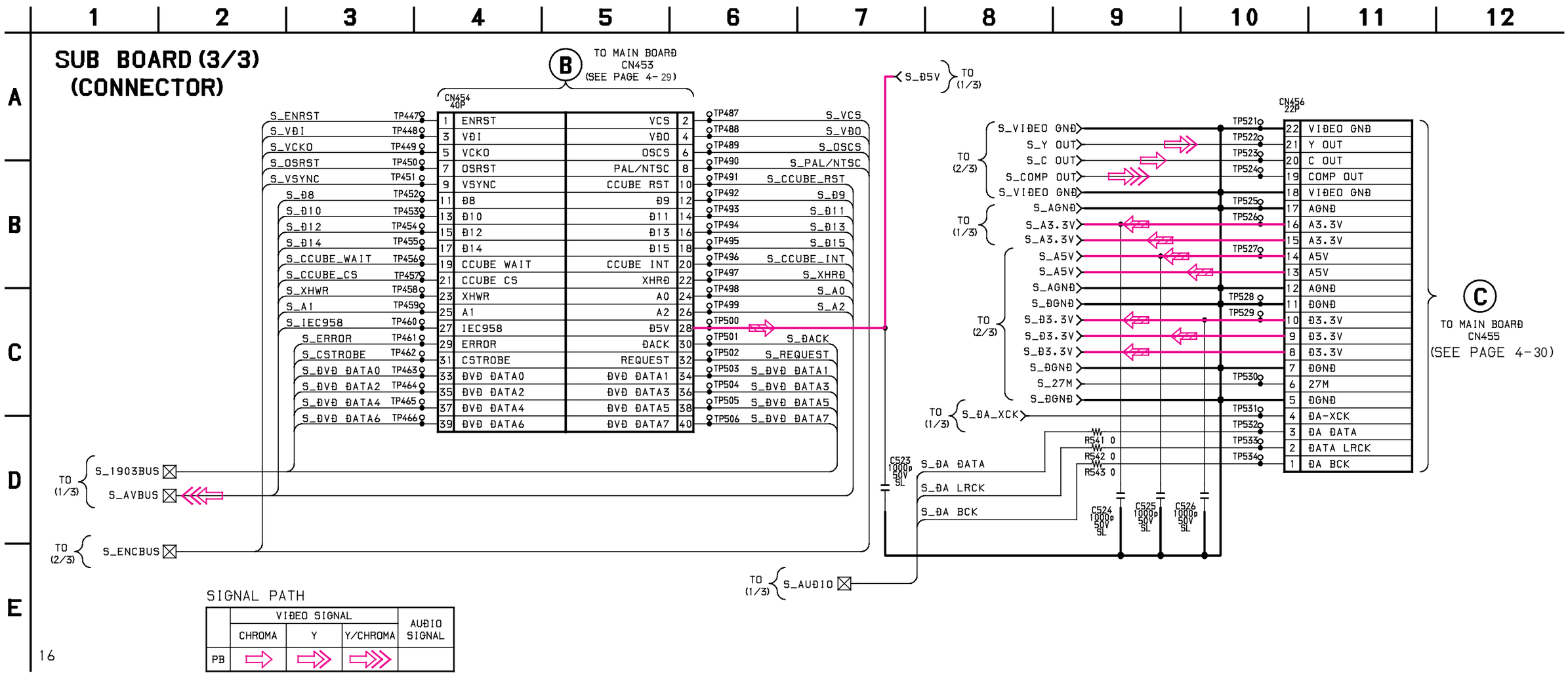
⑦ IC551 ㉛ 0.5V/div 20µsec/div



VIDEO D/A CONVERTER
SUB (2/3)

SUB (CONNECTOR) SCHEMATIC DIAGRAM

• See page 4-35 for SUB BOARD printed wiring board.



SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	

5-1. SYSTEM CONTROL MICON (MAIN BOARD IC801)

Pin.No.	Pin Name	I/O	Function
1	XPOWER	I	Power switch input L: pressed
2	PG4/CS0	I	Reserved
3	VSS	—	Digital ground
4	—	—	Not connected
5	VCC	—	Digital power supply
6	A0	O	Address bus A0
7	A1	O	Address bus A1
8	A2	O	Address bus A2
9	A3	O	Address bus A3
10	VSS	—	Digital ground
11	A4	O	Address bus A4
12	A5	O	Address bus A5
13	A6	O	Address bus A6
14	A7	O	Address bus A7
15	A8	O	Address bus A8
16	A9	O	Address bus A9
17	A10	O	Address bus A10
18	A11	O	Address bus A11
19	VSS	—	Digital ground
20	A12	O	Address bus A12
21	A13	O	Address bus A13
22	A14	O	Address bus A14
23	A15	O	Address bus A15
24	A16	O	Address bus A16
25	A17	O	Address bus A17
26	A18	O	Address bus A18
27	A19	O	Address bus A19
28	VSS	—	Digital ground
29	A20	O	Address bus A20
30	XINT_AV	I	Interrupt input form AV control L: Active
31	XINT_E	I	Error rate interrupt input
32	XINT_SCSI	I	SCSI controller interrupt input
33	XINT_2581	I	2581 interrupt input
34	XINT_1864	I	1864 interrupt input
35	VSS	—	Digital ground
36	VSS	—	Digital ground
37	XINT_GA	I	Gate array interrupt input
38	XINT_WP	I	Key wake-up interrupt input
39	VCC	—	Digital power supply
40	D0	I/O	Data bus D0
41	D1	I/O	Data bus D1
42	D2	I/O	Data bus D2
43	D3	I/O	Data bus D3
44	VSS	—	Digital ground
45	D4	I/O	Data bus D4
46	D5	I/O	Data bus D5
47	D6	I/O	Data bus D6
48	D7	I/O	Data bus D7
49	D8	I/O	Data bus D8
50	D9	I/O	Data bus D9

Pin.No.	Pin Name	I/O	Function
51	D10	I/O	Data bus D10
52	D11	I/O	Data bus D11
53	VSS	—	Digital ground
54	D12	I/O	Data bus D12
55	D13	I/O	Data bus D13
56	D14	I/O	Data bus D14
57	D15	I/O	Data bus D15
58	VCC	—	Digital power supply
59	MAIN_DA	O	AV control SIO data output
60	LCD_DA	O	LCD driver SIO data output
61	AV_DA	I	AV control SIO data input
62	XCS_LCD	O	LCD driver CS output
63	AV_CLK	O	AV control SIO clock output
64	LCD_CLK	O	LCD driver SIO clock output
65	VSS	—	Digital ground
66	XOPEN	I	OPEN key input L: ON (pressed)
67	VSS	—	Digital ground
68	VSS	—	Digital ground
69	XDOOR	I	OPEN/CLOSE detection input H: Open, L: Close
70	C/XD	O	LCD driver H: Command, L: Data
71	AVCS	O	AV control chip select output H: Select
72	BEEP	O	Headphones beep 3.5 kHz
73	FCMP_L	I	Focus window comparater: L
74	FCMP_H	I	Focus window comparater: H
75	PICMP	I	Pull-in comparater
76	TWOB	O	Tracking wobbling output (There is a possibility to use this signal.)
77	BCA	I	BCA pulse
78	VCOM	I	Connected to CXD2581 monitor terminal
79	DVD/XCD	O	DVD/CD selection output H: DVD, L: CD
80	XWDTOVF	O	Not connected
81	XRES	I	Hardware reset input
82	NMI	I	NMI interrupt H: Fixed
83	XSTBY	I	Hardware standby input
84	VCC	—	Digital power supply
85	XTAL	O	Clock output
86	EXTAL	I	Clock input
87	VSS	—	Digital ground
88	SCLKO	O	System clock output, initial output
89	VCC	—	Digital power supply
90	XAS	O	AS
91	XHRD	O	RD
92	XHWR	O	HWR
93	XLWR	O	LWR
94	XWAIT	I	WAIT
95	MAIN_BOOT	I	Main/Boot mode switch
96	TECH	O	Selecting A/D input from TE L: DC, H: AC
97	TXD2	O	SOI data output for jig
98	RXD2	I	SOI data input from jig
99	VSS	—	Digital ground
100	VSS	—	Digital ground

Pin.No.	Pin Name	I/O	Function
101	PON	O	Power ON/OFF control H: ON, L: OFF
102	BLIGHT	O	Backlight ON/OFF control H: ON, L: OFF
103	AVCC	—	Analog power supply
104	VREF	—	A/D converter reference voltage
105	DCINMNT	I	DC IN monitor
106	BATTMNT	I	BATT monitor
107	JIT	I	DVD jitter input
108	KEY1	I	A/D key input 1
109	MULTI2	I	Multiplexer 2 input
110	MULTI1	I	Multiplexer 1 input
111	KEY2	I	A/D key input 2
112	VCOC	O	VCO control output
113	AVSS	—	Analog ground
114	VSS	—	Digital ground
115	CHG	O	Charging control H: ON, L: OFF
116	XHOLD	I	Hold switch input H: Normal, L: Hold
117	COUT	I	C. OUT
118	HFGI	I	Spindle FG input 1 rotation per 6 pulses
119	XBATTSW	I	Battery detection switch H: NO, L: YES
120	TKC	I	Detection input of number of sled rotations Moved distance of sled per one pulse, 66 um
121	RASEL	O	Selection of either REQ or ACK of D1864 H: SCSI, L: ZIVA
122	RMC	I	Remote control input
123	MD0	I	Mode setting “L”
124	MD1	I	Mode setting “H”
125	MD2	I	Mode setting “H”
126	URST	O	Reset output to AV control L: Reset
127	GFS	I	CD GFS input
128	LOCK	I	CD LOCK input

5-2. A/V CONTROL MICON (MAIN BOARD IC901)

Pin.No.	Pin Name	I/O	Function
1	RES	—	
2	RES	—	
3	OSCS	O	OSD chip select output
4	ENRST	O	ENC reset output
5	P16/OSRST	O	OSD reset output
6	P17/VCS	O	Video encoder chip select output
7	VSS	—	Digital ground
8	TXD0/AV_DA	O	Main microprocessor serial data output
9	TXD1/VDO	O	Video encoder/OSD serial data clock
10	RXD0/MAIN_DA	I	Main microprocessor serial data output
11	RXD1/VD1	I	Video encoder/OSD serial data output
12	SCK0/SCK2	I	Main microprocessor serial clock input
13	SCK1/VCKO	O	Video encoder/OSD serial cock output
14	D0	I/O	Data bus D0
15	D1	I/O	Data bus D1
16	D2	I/O	Data bus D2
17	D3	I/O	Data bus D3
18	VSS	—	Digital ground
19	D4	I/O	Data bus D4
20	D5	I/O	Data bus D5
21	D6	I/O	Data bus D6
22	D7	I/O	Data bus D7
23	D8	I/O	Data bus D8
24	D9	I/O	Data bus D9
25	D10	I/O	Data bus D10
26	D11	I/O	Data bus D11
27	D12	I/O	Data bus D12
28	D13	I/O	Data bus D13
29	D14	I/O	Data bus D14
30	D15	I/O	Data bus D15
31	VSS	—	Digital ground
32	A0	O	Address bus A0
33	A1	O	Address bus A1
34	A2	O	Address bus A2
35	A3	O	Address bus A3
36	A4	O	Address bus A4
37	A5	O	Address bus A5
38	A6	O	Address bus A6
39	A7	O	Address bus A7
40	VCC	—	Digital power supply
41	A8	O	Address bus A8
42	A9	O	Address bus A9
43	A10	O	Address bus A10
44	A11	O	Address bus A11
45	A12	O	Address bus A12
46	A13	O	Address bus A13
47	A14	O	Address bus A14
48	A15	O	Address bus A15
49	VSS	—	Digital ground
50	A16	O	Address bus A16

Pin.No.	Pin Name	I/O	Function
51	A17	O	Address bus A17
52	A18	O	Address bus A18
53	A19	O	Address bus A19
54	DAC_DA	O	Audio DAC serial data output
55	DAC_SC	I	Audio DAC chip select output
56	DAC_CLK	O	Audio DAC serial clock output
57	MD0	I	Mode 4 L: Fixed
58	MD1	I	Mode 4 L: Fixed
59	XNT/PAL_O	O	Video encoder NTSC/PAL selection output (NTSC: L, PAL: H)
60	XWDTOVF	O	Watch dog timer overflow output
61	MD2	I	Mode 4 L: Fixed
62	XRST	I	Reset input
63	NMI	I	NMI input H: Fixed
64	XSTBY	I	Hardware standby input H: Fixed
65	VCC	—	Digital power supply
66	XTAL	—	External oscillator is connected to this terminal
67	EXTAL	—	External oscillator is connected to this terminal
68	VSS	—	Digital ground
69	PF7	—	
70	XAS	O	AS output
71	XRD	O	RD output
72	XHWR	O	HWR output
73	XLWR	O	LWR output
74	XWAIT	I	WAIT output 1903, CCube
75	IRQ1/XINT_1903	I	V. sync input
76	IRQ2/XINT_CCUBE	I	CCUBE interruption input
77	AVCC	—	Analog power supply
78	VREF	—	
79	NT/PAL	I	NTSC/PAL selector switch input (NTSC: L, PAL: H)
80	AR0	I	(AR0) Analog reference input 0
81	AR1	I	(AR1) Analog reference input 1
82	R1	I	Reference input 1
83	AVSS	—	Analog ground
84	VSS	—	Digital ground
85	S1 OUT	O	S-terminal S1 mode ON/OFF terminal (S1: H, Normal: L)
86	CCUBE_RST	O	CCUBE reset
87	XDVD/CD	O	DVD and video CD selection (DVD: L, Video CD: H)
88	XMPEG/CD	O	MPEG Audio and CD-DA selection (MPEG: L, CD-DA: H)
89	JACK	I	Jack insertion detection
90	XENC_STOP	O	Video encoder clock ON/OFF (ON: H, OFF: L)
91	MAIN/CS	O	Chip select output for main microprocessor
92	CCUBE_STOP	O	MPEG decoder clock ON/OFF (ON: H, OFF: L)
93	DAC-RST	O	Audio DAC reset output
94	XAVCS	I	Chip select for serial communication with main microprocessor
95	RAM_CS	O	CS of S_RAM
96	CS1/CCUBE_CS	O	CCUBE chip select output
97	CS0/ROM_CS	O	RAM chip select output
98	VCC	—	Digital power supply
99	RES	—	
100	RES	—	

SECTION 6
SELF-DIAGNOSIS FUNCTION

■ What is the Self-Diagnosis Function?

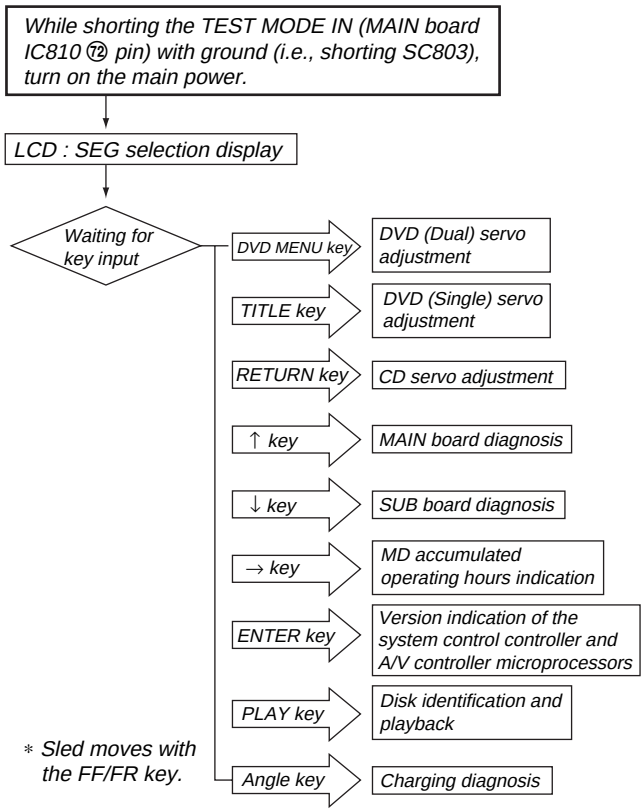
When an error that the microprocessor can judge, occurs during normal playback, this function shows an error code on LCD or OSD (on-screen display) to help operator judge what is happening in the machine. There are two types of error code as shown below.

When the error can be solved by users : C**
When the error requires repair work by serviceengineer : E****

* When the error is related to media (DVD disc or CD disc):
When an error occurs due to defective media, the error code C** is displayed instead of the error code E****. For the specific E**** code errors (i.e., servo related errors etc.,) that are caused by external reasons such as defective disc or the like, but not caused by the machine itself, these errors are displayed by the C** code, not the E**** code. This is done in order to prevent user bringing the machine into service station by mistake when an error is caused by media and the machine does not have an error. The specific E**** code errors that can be judged as the hardware errors without question, are displayed in the same way as the C** code.

■ What is Diagnosis?

This is the hardware check function for the printed wiring boards to be mainly used in the assembly line of the production factory. Connection of the A/V control microprocessor with individual device, and communication are checked. The diagnosis is effective in the repair services too.


While shorting the TEST MODE IN (MAIN board IC810 ⑫ pin) with ground (i.e., shorting SC803), turn on the main power.
LCD : SEG selection display
Waiting for key input
DVD MENU key
DVD (Dual) servo adjustment
TITLE key
DVD (Single) servo adjustment
RETURN key
CD servo adjustment
↑ key
MAIN board diagnosis
↓ key
SUB board diagnosis
→ key
MD accumulated operating hours indication
ENTER key
Version indication of the system control controller and A/V controller microprocessors
PLAY key
Disk identification and playback
Angle key
Charging diagnosis
* Sled moves with the FF/FR key.

Self-diagnosis function

This function displays the player's condition with three or five digits (a combination of the alphabet and numbers) on the TV screen or in the front panel display. If this occurs, check the following code chart.

Code number	Means	Do
C01	The battery pack is fully consumed.	Connect the AC power adapter to recharge.
C05	The AC power adapter has a problem.	Connect the supplied AC power adapter firmly. If the code number is still displayed, see page 66.
C13	• The disc is dirty. • The player cannot play the disc.	• Clean the disc with a soft cloth (page 63). • Make sure that the disc is compatible (page 4).
EXXXX (XXXX are optional numbers.)	To prevent a malfunction, the self-decision function is working.	Please contact your Sony dealer and present the five digits number displayed. Example: E0002

<E code list>

- E0002 Checksum error of the frash ROM in system controller.
  → Write again in the frash ROM.

- E1002 Serial communication error between system controller and A/V controller.
  → Check the three bus lines AV_DA, MAIN_DA and AV_CLK.

DVD (Dual) Servo Adjustment

↓ *Set the test disk (HLX-502).*
↓ *DVD MENU key*

LD ON (→ Laser power measurement and correction)

↓ *DVD MENU key*

FCS ON (→ TRK OFF, SLED OFF, CLV coarse servo)

↓ *DVD MENU key*

Traverse automatic adjustment (→ Displays the adjustment value)

↓ *DVD MENU key*

TRK ON, SLED ON, CLV-N× 1

↓

FG, TG automatic adjustment (→ Displays the adjustment value)

↓ *DVD MENU key*

F Bias automatic adjustment (→ Displays the adjustment value)

↓ *DVD MENU key*

Confirmation of RF level and jitter value

↓ *DVD MENU key*

Confirmation of error rate

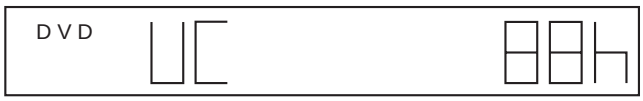
↓ *DVD MENU key*

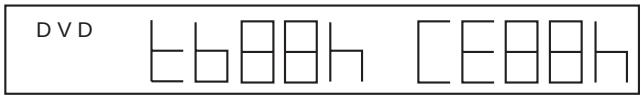
Focus jump L0 → L1

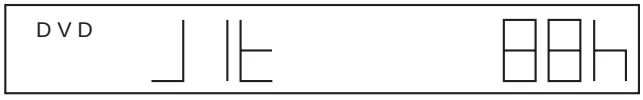
↓ *DVD MENU key*

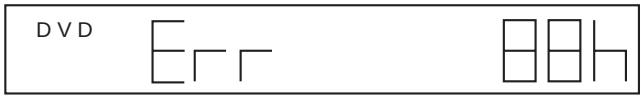
Focus jump L1 → L0

**) Sled moves with the FF/FR key Returns to the initial state of waiting for key input with the STOP key.*





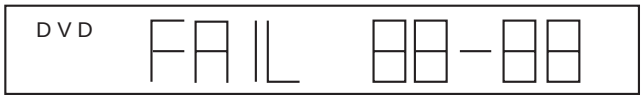




• Error Code

During the DVD dual servo adjustment

- 01-01 : FCS ON NG
- 02-01 : Center error automatic adjustment NG
- 02-02 : Traverse automatic adjustment NG
- 03-01 : TRK ON NG
- 03-02 : SLD ON NG
- 03-03 : FG automatic adjustment NG
- 03-04 : TG automatic adjustment NG
- 04-01 : FCS bias automatic adjustment NG
- 05-01: Jitter value measurement NG
- 06-01 : Error rate measurement NG
- 07-01 : FCS jump (Layer 0 Å® 1) NG
- 08-01 : FCS jump (Layer 1 Å® 0) NG



DVD (Single) Servo Adjustment

↓ *Set the test disk (HLX-503).*

↓ *TITLE key*

LD ON (→ Laser power measurement and correction)

↓ *TITLE key*

FCS ON (→ TRK OFF, SLED OFF, CLV coarse servo)

↓ *TITLE key*

Traverse automatic adjustment (→ Displays the adjustment value)

↓ *TITLE key*

TRK ON, SLED ON, CLV-N × 1

↓

FG, TG automatic adjustment (→ Displays the adjustment value)

↓ *TITLE key*

F Bias automatic adjustment (→ Displays the adjustment value)

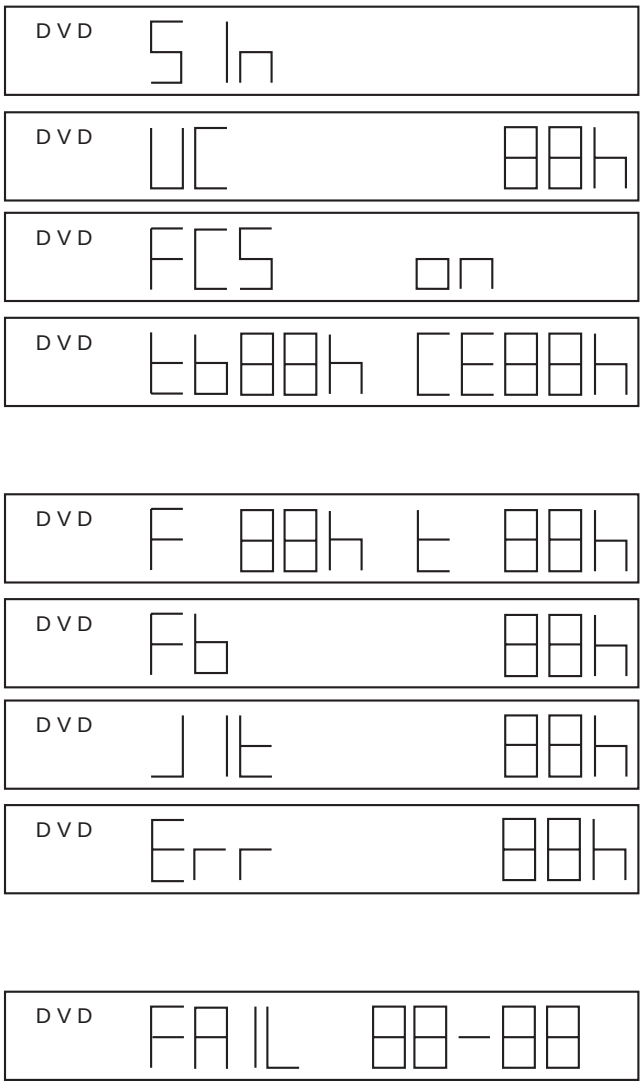
↓ *TITLE key*

Confirm the RF level, jitter value

↓ *TITLE key*

Confirm error rate

∗) *SLED moves with the FF/FR key. Returns to the initial state waiting for key input with the STOP key.*



• Error Code

During the DVD single servo adjustment

01-01 : FCS ON NG
02-01 : Center error automatic adjustment NG
02-02 : Traverse automatic adjustment NG
03-01 : TRK ON NG
03-02 : SLD ON NG
03-03 : FG automatic adjustment NG
03-04 : TG automatic adjustment NG
04-01 : FCS bias automatic adjustment NG
05-01: Jitter value measurement NG
06-01 : Error rate measurement NG

CD Servo Adjustment

↓ *Set the test disk (TGR-21).*

↓ *RETURN key*

LD ON (→ Laser power measurement, correction)

↓ *RETURN key*

FCS ON (→ TRK OFF, SLED OFF, CLV coarse servo)

↓ *RETURN key*

A/L adjustment, traverse automatic adjustment (→ Displays the adjustment value)

↓ *RETURN key*

TRK ON, SLED ON, CLV-N× 1

↓

FG, TG automatic adjustment (→ Displays the adjustment value)

↓ *RETURN key*

CAV-W× 4

↓ *RETURN key*

CAV-W× 8

*) *SLED moves with the FF/FR key. Returns to the initial state waiting for key input with the STOP key.*

• Error Code

During the CD servo adjustment

01-01 : FCS ON NG
02-01 : Alignment automatic adjustment NG
02-02 : Traverse automatic adjustment NG
03-01 : TRK ON NG
03-02 : SLD ON NG
03-03 : FG automatic adjustment NG
03-04 : TG automatic adjustment NG

Disk identification and playback

↓

Disk identification

↓

Displays the identification result

↓ *PLAY key*

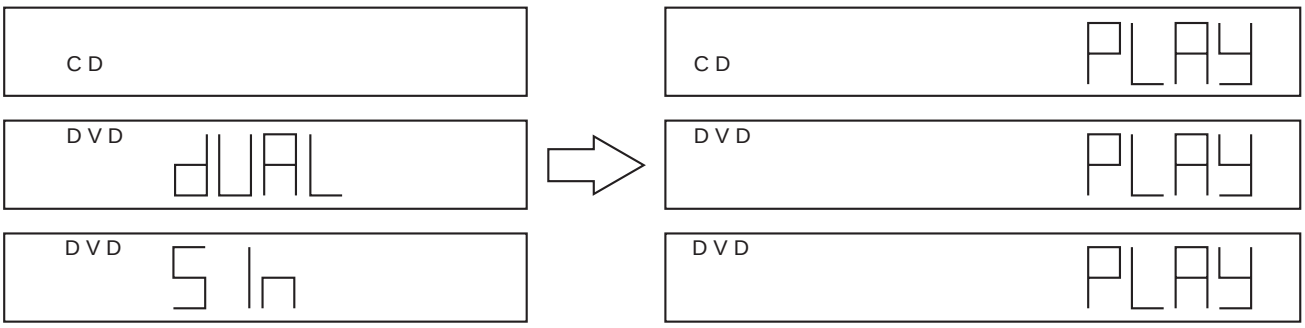
Continous uninterru ptible play back

*) *Playback of the Video CD and DVD video is possible. Cannot playback the music CD.*

*) *SLED moves with the FF/FR key. Returns to the initial state waiting for key input with the STOP key.*

Identification Result

During playback



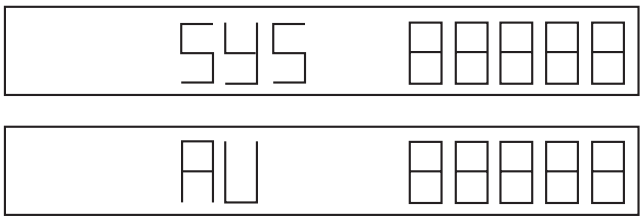
Displays the microprocessor version No.

↓

Displays the main microprocessor version No.

↓ *ENTER key*

Displays the A/V microprocessor version No.



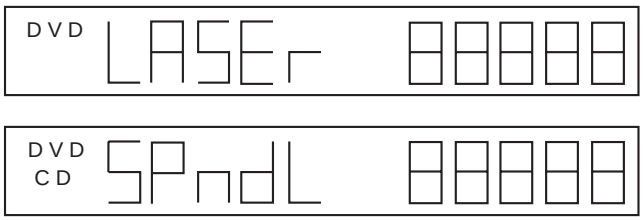
MD accumulated operating hours indication

↓

DVD laser accumulated output hours indication

↓ [→] *key*

Spindle accumulated rotation hours indication



∗) *When the CLEAR button (of remote control) is pressed during hours display, the hours data on the display are cleared by reset.*

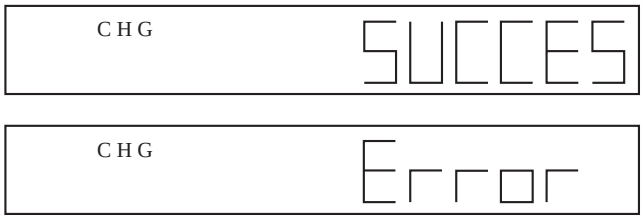
Charging diagnostics

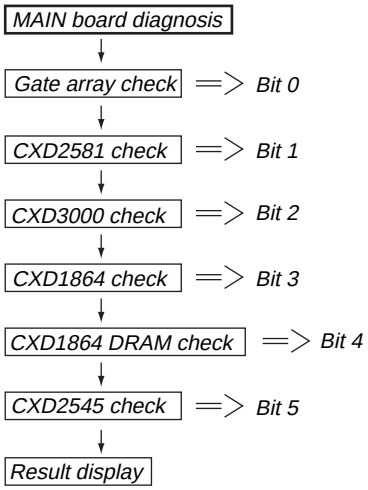
↓

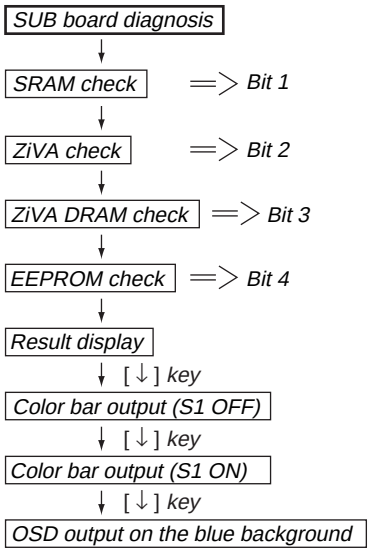
Charging voltage check

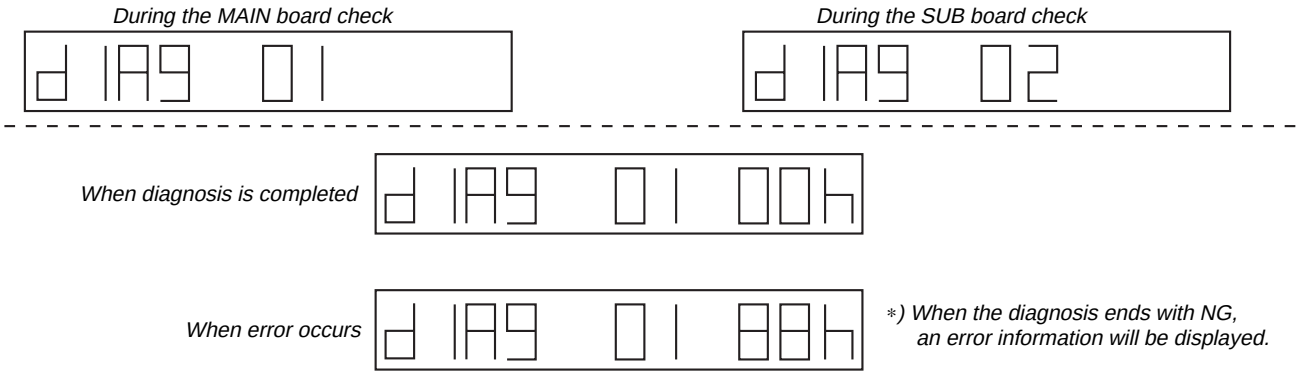
↓

Result display








During the MAIN board check
dIAg 01
During the SUB board check
dIAg 02
When diagnosis is completed
dIAg 01 00h
When error occurs
dIAg 01 88h
*) When the diagnosis ends with NG, an error information will be displayed.

• Error code

MAIN board diagnosis
Displays “dIAg 01-Xxh” on the LCD

XXh Bit 5 : CXD2545 is checked NG
Bit 4 : CXD1846 DRAM is checked NG
Bit 3 : CXD1846 is checked NG
Bit 2 : CXD30000 is checked NG
Bit 1 : CXD 2581 is checked NG
Bit 0 : Gate array is checked NG

∗) In the case NG, the above described respective bits become “1”.

SUB board diagnosis
Displays “dIAg 02-Xxh” on the LCD

XXh Bit 4 : EEPROM is checked NG
Bit 3 : ZiVA DRAM is checked NG
Bit 2 : ZiVA is checked NG
Bit 1 : SRAM is checked NG

∗) In the case NG, the above described respective bits become “1”.

■ Rewriting the Flash ROMs on System Control Microprocessor and A/V control Microprocessor

1. Preparation of the personal computer side
   The “RS96” directory must be copied to the “Desktop” directory of the PC that is used for rewriting, as an entire directory.

   @Note: If the “RS96” directory is copied to any locations other than the “Desktop” directory, rewriting will not be performed.

2. Preparation of Files
   When the “RS96” directory that was copied in step 1, is opened, the follow files appear:

rs96. exe	Serial command software
SortAV	A file that creates the binary file of the A/V control microprocessor
Sort SYS	A file that creates the binary file of the system control microprocessor
∗ rs96. log	Log file of RS96
∗ Exe	The directory in which execution file is located.

The files marked by the asterisk mark (∗) are the hidden files that are not necessary to look at. They can be seen only when “all files display” that is an option of the Explorer is set.

To rewrite the firmware via serial communication, the “mboot” binary file must be created from the “∗∗∗. mot” file because the binary file is used instead of the “∗∗∗. mot” S format file.

a. How to create the system control binary file
   Drug and drop the ∗∗∗. mot file of the version which you want to rewrite, to the SortSYS file.
b. How to create the A/V control binary file
   Drug and drop the ∗∗∗. mot file of the version which you want to rewrite, to the SortAV file.

When the step “a” or “b” is performed, the file named “mboot” is created. (The A/V and system controls have the same file name.) The file name is set by default and the names other than “mboot” cannot be used.

3. Preparations at the Board Side

   Connect the personal computer (“RS96” is copied from the floppy disc) in which the mboot and the RS96. EXE are located in the same directory as prepared in steps 1 and 2, to the circuit board which you want to upgrade the version with a serial interface cable. Select the version upgrading mode.

   Conditions to enter the version upgrading mode

   While the OPEN switch: HIGH, the OPEN key: LOW, and the TEST mode: LOW, the DC-IN is applied (or system control reset).
   In actual operation, open the shorting taps of the OPEN switch (this switch is normally open), shorts the shorting taps of the TEST mode tap, and while pressing the OPEN key, connect the DC-IN power (or reset the system control microprocessor).
   When the machine enters the version upgrading mode, the POWER LED flashes to indicate that it is in the version upgrading mode.

4. Upgrading the Version (Rewriting the Firmware)

Move to the directory where RS96. EXE is located, and confirm that the “Size during execution” is in the “Maximized state” setting using the property setting of RS96. EXE. Then execute the RS96. EXE.
When the prompt “RS232C [9600] N>” appears, press [Enter]. The following message appears:
[SYS] ER : Illegal Command!
The first [SYS] means that the machine is in the rewriting mode of the system control microprocessor.
The rewriting mode has two modes:
[SYS] Mode The mode to rewrite the system control microprocessor
[AV] Mode The mode to rewrite the A/V control microprocessor

To rewrite the A/V control microprocessor, enter and press as follows:
AV [Enter]
to switch the rewriting mode to the [AV] Mode.
To rewrite the system control microprocessor, enter and press as follows:
SYS [Enter]
to switch the rewriting mode to the [SYS] Mode.
When the desired mode is selected (it must be confirmed by the display), enter and press as follows:
bootm [Enter]
Then the version upgrading starts and the following display appears.

password?
cavcav
bootm start
erase succeeded <——————When this message appears, it means that erasing the flash memory is completed.
word_num = XXXXXXXXXXX <— The file size is displayed.
|—+—|—+—|—+—|—+—|—+—|—+—|—+—|
|************ <—————— Indicates how far the rewriting is completed.

When a chain of asterisk marks ****** reaches the end, the message “ bootm succeeded” is displayed and the prompt RS96 appears, the rewriting is complete.

5. Confirming the Rewriting
You can confirm if the system control microprocessor is correctly rewritten after the above described process is completed.
The A/V control microprocessor cannot be confirmed of the rewriting.
Confirm if the flash ROM is correctly rewritten in step 4.

The message “bootm succeeded” will appear at step 4 even though the data becomes erroneous during serial communication so that the wrong data is written into the flash ROM.
In order to verify if the system control microprocessor is correctly rewritten, start up the version upgrading mode again (while pressing the OPEN key, connect the DC-IN plug), and use the “inquiry” command.
Enter and press as follows:
inquiry [Enter]

When the version number that you have intended to write, appears as shown below, the rewriting is successfully completed.
[SYS] OK : Update : Ver XXXXX [DATA: 98. XX.XX]

[SYS] SYS-con Check Sum error! Do bootm with SYS mode.
If the above message appears, the rewriting has failed. Find the causes and try again from the beginning.

The possible causes of failure are as follows:
- The data become erroneous during the serial communication.
- Leads of the flash ROM have the poor (hollow) soldering.
- Leads of the microprocessors have the poor (hollow) soldering.

To confirm the version number and to confirm rewriting, set up the TEST mode, not the version upgrading mode, and connect the DC IN plug. Turn the power on at the test mode, Enter and press as follows:
versionav [Enter]

When the version number that you have intended to write, appears as shown below, the rewriting is successfully completed.
[DVD] OK : AV Update : Ver. 0000XXXX
When rewriting of the A/V microprocessor has ended in fail, rewriting it again sometimes cannot be performed any more.
You can exit from RS96 by pressing ^C (Ctrl + C).
The version number display can be done using the self diagnosis function.

SECTION 7
ELECTRICAL ADJUSTMENTS

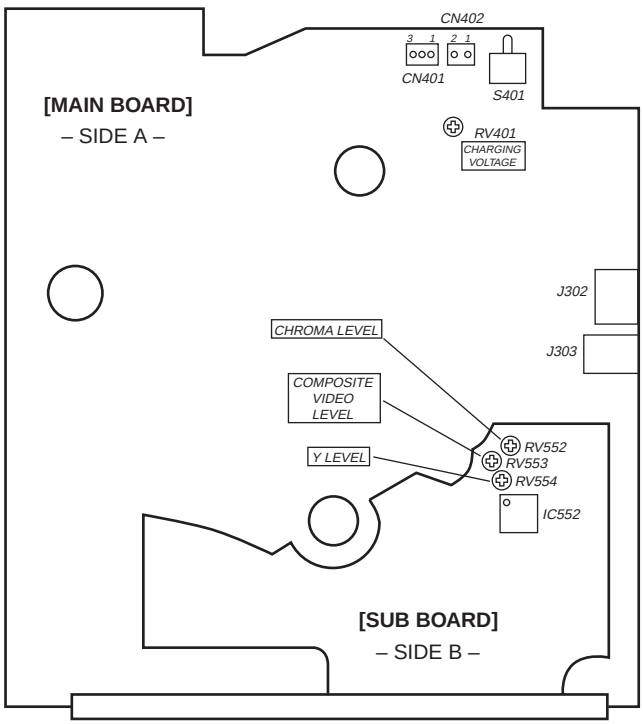
When making adjustment, refer to 7-4. Adjustment Related Parts Location Diagram.

This section describes the procedures and instructions that are necessary for all adjustments of the electrical circuit of this machine.

Instruments required:

1) Color monitor TV
2) Oscilloscope single or dual trace, band width of 100 MHz or higher with delay mode
3) Digital voltmeter
4) Remote commander
5) DVD reference discs
   HLX-507 (J-6090-078-A) (PAL, dual layer)
   HLX-506 (J-6090-077-A) (PAL, single layer)
6) CD reference disc
   TGRS-21 (J-2501-110-A)

Adjustment Parts



7-1. CHARGE VOLTAGE ADJUSTMENT (MAIN BOARD)

Measuring Instrument	Digital voltmeter
Adjustment element	RV401
Measurement point	Between TP416 (+) (CN 401) and TP419 (–) (CN 402)
Specified Value	8,44 ± 0.01 V

Adjustment Method:

1) Adjust RV401 for 8.44 ± 0.01V.

7-2. VIDEO ADJUSTMENT

1. Composite Video Level Adjustment (SUB board)

<Purpose>

This adjustment aims at satisfying the NTSC specifications. If it is not adjusted correctly, picture will be too bright or too dark.

Mode	Test mode 100% color bar output mode
Signal	Color bars
Measurement point	J303 (Terminated in 75Ω)
Measuring Instrument	Oscilloscope
Adjustment element	RV553
Specified Value	1 ± 0.05 Vp-p

Check Method :

1) Set up the initial menu of the test mode using the SUB board diagnosis in which the internal color bar appear.
2) Adjust RV 553 for 1 ± 0.05 Vp-p.

Fig. 7-1

2. Y Level Adjustment (SUB board)

<Purpose>

This item checks that the S video output Y has the correct amplitude. If it is not correct, the output Y signal has the incorrect brightness when connected to monitor, etc.

Mode	100 % color bar output mode
Signal	Color bars
Measurement Point	J302 S VIDEO OUT (Terminated in 75Ω)
Measuring Instrument	Oscilloscope
Adjustment element	RV554
Specified Value	1 ± 0.05 Vp-p

Check Method :

1) Confirm that the Y level is 1 ± 0.05 Vp-p.

Fig. 7-2

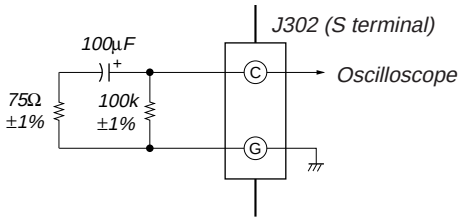
3. Chroma Level Adjustment (SUB board)

<Purpose>

This item checks if the chroma signal amplitude satisfies the NTSC specifications. If it is not correct, color will be too thick or thin.

Mode	100 % color bar output mode
Signal	Color bars
Measurement Point	J302 S VIDEO OUT
Measuring Instrument	Oscilloscope
Adjustment element	RV552
Specified Value	286 ± 20 mVp-p

Connection:



Checking Method :

1) Confirm that the sub-carrier burst signal has amplitude of 286 ± 20 mVp-p.

Fig. 7-3

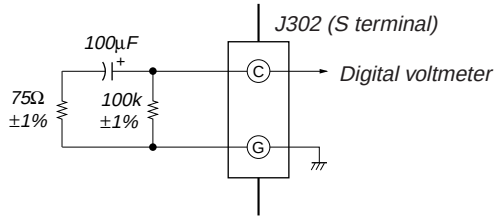
4. S Video Output DC Level Check (MAIN board)

<Purpose>

This item checks if the signals that support the S1 and S2 compatible TV are correct. If they are not correct, the TV will not switch to letter box, etc., automatically.

Mode	100 % color bar output mode
Signal	Color bars
Measurement Point	J302 S VIDEO OUT
Measuring Instrument	Digital voltmeter
Specified Value	S-terminal 5 V : 5.0 $^{+0}_{-1.5}$V

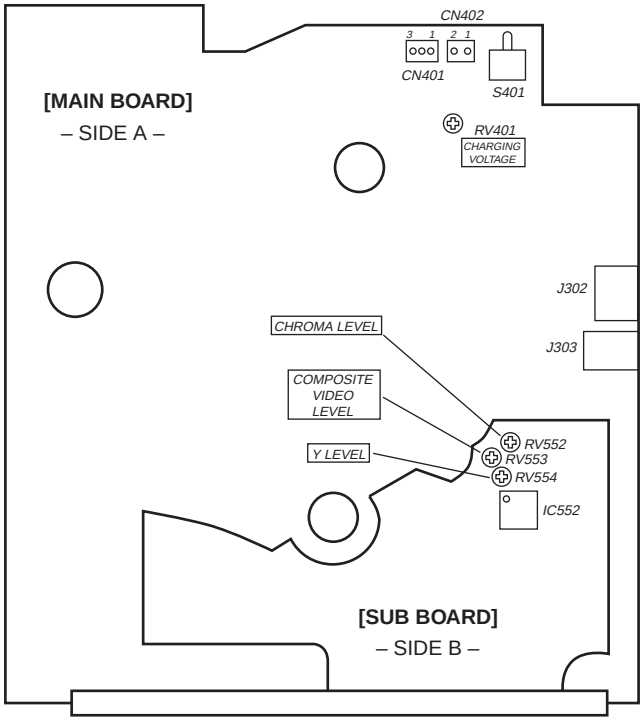
Connection:



Check Method :

1) Set up the initial menu of the test mode using the SUB board diagnosis in which the color bar output must be set to ON (S1: ON).
2) Confirm that the J302 Ⓒ pin is 5.0 $^{+0}_{-1.5}$V

Adjustment Parts



SECTION 8
REPAIR PARTS LIST

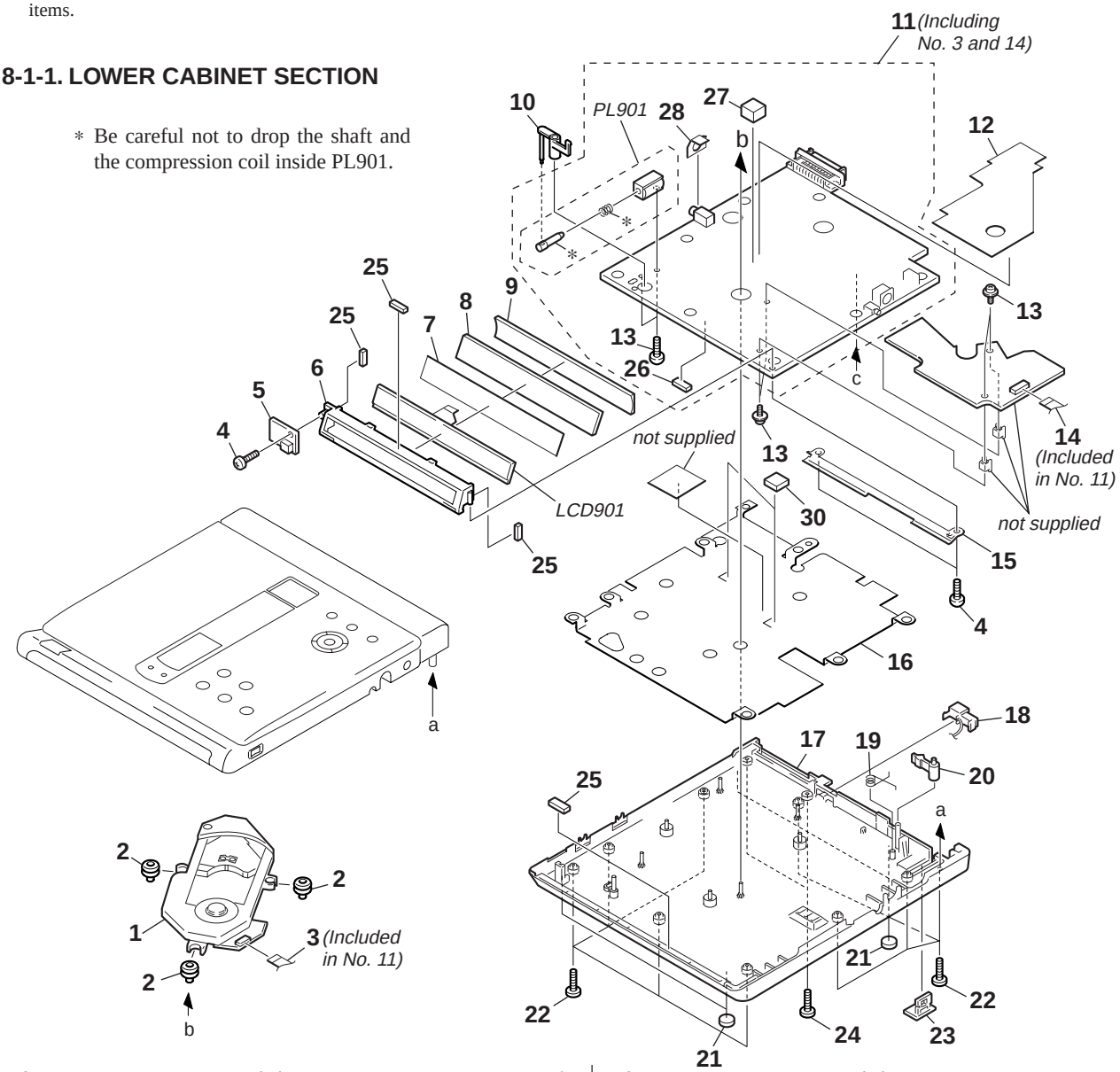
8-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

8-1-1. LOWER CABINET SECTION

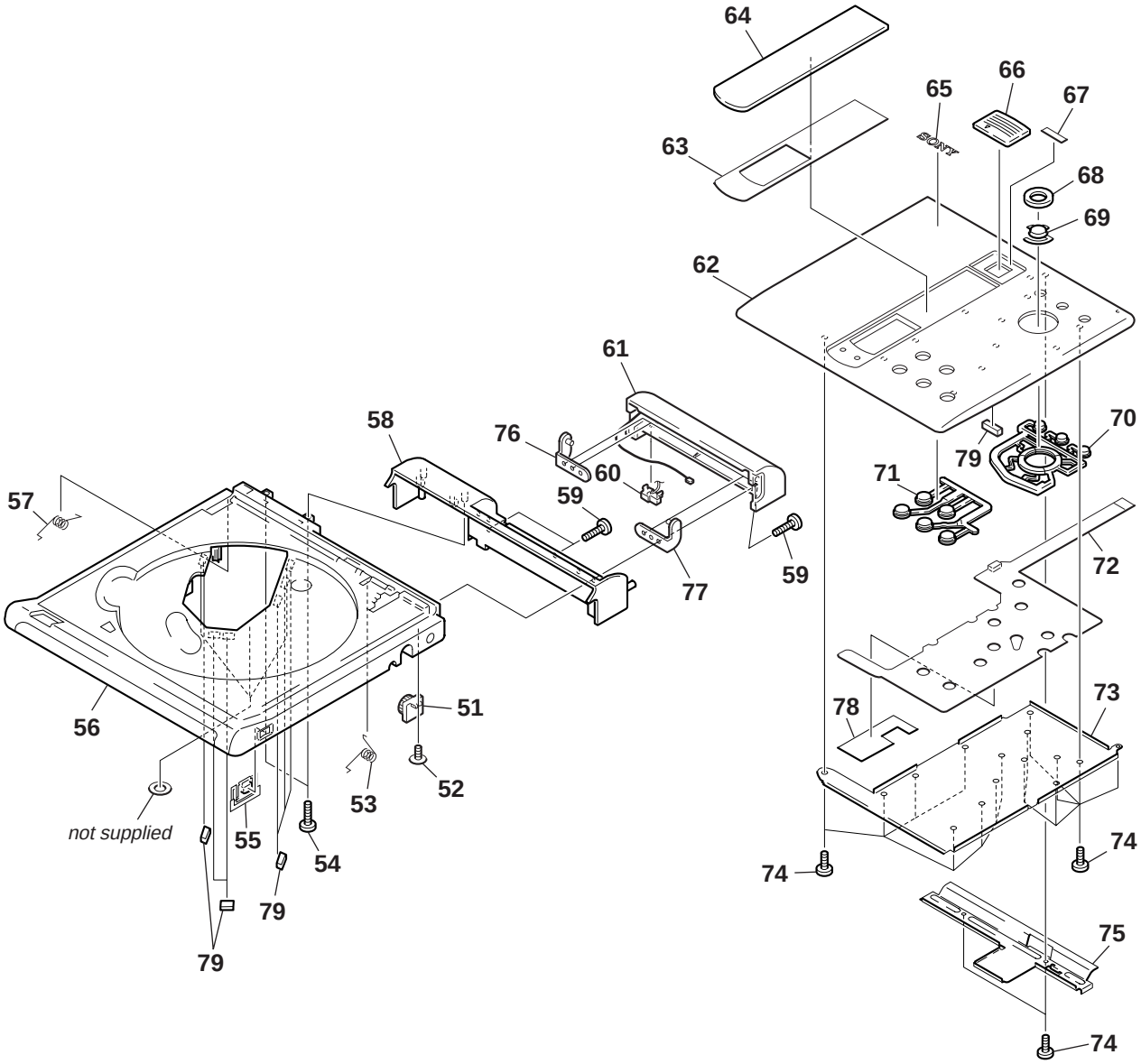
* Be careful not to drop the shaft and the compression coil inside PL901.



Ref. No.	Part No.	Description	Remarks
1	A-3250-860-A	DVD MECHANISM DVDM-D50	
2	4-969-985-21	INSULATOR	
3	1-783-129-11	CABLE, FLEXIBLE FLAT	
4	3-719-408-01	SCREW (B2), TAPPING, P3	
* 5	1-668-456-11	REMOTE BOARD	
* 6	4-900-666-01	HOLDER, LCD	
7	4-900-687-01	SHEET, DIFFUSION	
8	4-900-688-01	PLATE (LCD), LIGHT GUIDE	
9	4-900-676-01	REFLECTOR (LED)	
10	4-900-675-01	LEVER, LOCK	
11	A-8044-872-A	MAIN BOARD, COMPLETE	
12	4-900-699-01	SHEET, RF SHIELD	
13	4-900-907-01	SCREW (M2 × 2.5), PWH	
14	1-783-128-11	CABLE, FLEXIBLE FLAT	
15	4-900-661-01	SHEET, REFLECTION	
* 16	4-900-670-01	HEAT SINK	

Ref. No.	Part No.	Description	Remarks
17	4-900-663-01	CABINET (LOWER)	
18	1-694-379-11	TERMINAL, BATTERY 3P	
19	4-900-658-01	SPRING (BATT), TORSION	
20	4-900-695-01	ARM, BATT DETECTION	
21	4-962-025-21	FOOT, RUBBER	
22	4-982-491-01	SCREW (2 × 8), TAPPING	
23	4-900-671-02	KNOB, BATT RELEASE	
24	3-336-395-31	SCREW (B2 × 10) (G), TAPPING	
25	4-638-847-01	CUSHION, HOLDER	
26	4-639-038-01	SHEET, CONNECTOR	
27	4-638-862-01	CUSHION (MD)	
28	4-638-846-01	SHEET, ELECTROSTATIC	
30	4-900-693-01	CUSHION	
LCD901	1-803-010-11	DISPLAY PANEL, LIQUID CRYSTAL	
PL901	1-454-819-11	SOLENOID, PLUNGER	

8-1-2. UPPER CABINET SECTION



Ref. No.	Part No.	Description	Remarks
51	3-351-377-01	DAMPER	
52	4-900-698-01	SCREW (+1.4 × 2.5)	
53	4-900-679-01	SPRING (OPEN), TORSION	
54	3-336-395-31	SCREW (B2 × 10) (G), TAPPING	
55	4-900-669-01	KNOB, POWER	
56	X-4621-902-2	CABINET (UPPER) ASSY	
57	4-900-682-01	SPRING (L), TORSION	
58	4-900-665-02	COVER, CABINET (UPPER)	
59	4-982-491-01	SCREW (2 × 8), TAPPING	
60	1-694-378-11	TERMINAL, BATTERY 2P	
61	4-900-668-01	LID, BATTERY CASE	
62	4-900-664-02	LID, UPPER	
63	4-900-697-01	SHEET (UPPER LID), ADHESIVE	
64	4-900-673-01	PLATE (UPPER LID), TRANSPARENT	

Ref. No.	Part No.	Description	Remarks
65	4-946-905-22	ENBLEM (NO.4.5), SONY	
66	4-900-678-01	KNOB, HOLD	
67	4-900-696-01	SEAL (HOLD)	
68	4-900-681-01	ORNAMENT, BUTTON	
69	4-900-659-01	BUTTON (C), CONTROL	
70	4-900-680-01	BUTTON (B), CONTROL	
71	4-900-672-01	BUTTON (A), CONTROL	
72	1-668-453-11	PWB, CONTROL FLEXIBLE	
* 73	4-900-674-01	COVER, BUTTON	
74	3-051-112-01	SCREW, 2 LOCK (1.4 × 2.5)	
* 75	4-900-660-01	REINFORCEMENT (UPPER LID)	
76	4-900-684-01	PLATE (L), FULCRUM	
77	4-900-685-01	PLATE (R), FULCRUM	
78	4-638-846-01	SHEET, ELECTROSTATIC	
79	4-638-847-01	CUSHION, HOLDER	

8-2. ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

Ref. No.	Part No.	Description			Remarks
	A-8044-872-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C001	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C002	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C003	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C004	1-124-779-00	ELECT CHIP	10uF	20%	16V
C005	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C006	1-124-779-00	ELECT CHIP	10uF	20%	16V
C007	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C008	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C010	1-124-779-00	ELECT CHIP	10uF	20%	16V
C011	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C012	1-124-779-00	ELECT CHIP	10uF	20%	16V
C013	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C014	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C015	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C016	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C017	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C018	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C019	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C020	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C021	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C022	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C023	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C024	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C025	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C026	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C027	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C028	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C029	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C030	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C031	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C032	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C033	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C034	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C035	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C036	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C037	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C038	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C039	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C040	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C041	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C042	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C043	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C044	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C045	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C046	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C047	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C048	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C049	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C050	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C051	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C052	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C053	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C054	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C055	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C056	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C058	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C059	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C060	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C061	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C062	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C066	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C067	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C068	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C069	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C071	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C072	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C073	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C074	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C075	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C076	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C077	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C078	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C079	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C080	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C081	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C101	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C102	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C103	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C104	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C105	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C106	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C107	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C201	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C202	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C203	1-135-091-00	TANTALUM CHIP	1uF	20%	16V

MAIN

Ref. No.	Part No.	Description			Remarks
C204	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C205	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C206	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C207	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C304	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C306	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C307	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C308	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C309	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C310	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C311	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C312	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C313	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C317	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C318	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C319	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C320	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C321	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C322	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C324	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C325	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C330	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C331	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C332	1-124-779-00	ELECT CHIP	10uF	20%	16V
C333	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C335	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C337	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C338	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C339	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C340	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C343	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C346	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C349	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C352	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C353	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C355	1-164-346-11	CERAMIC CHIP	1uF		16V
C357	1-164-346-11	CERAMIC CHIP	1uF		16V
C358	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C359	1-124-779-00	ELECT CHIP	10uF	20%	16V
C360	1-126-395-11	ELECT	22uF	20%	16V
C361	1-164-346-11	CERAMIC CHIP	1uF		16V
C362	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C363	1-164-346-11	CERAMIC CHIP	1uF		16V
C365	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C366	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C368	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C369	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C371	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C372	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C373	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C376	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C377	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C378	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C379	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C380	1-113-996-11	TANTAL. CHIP	220uF	20%	4V
C381	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C382	1-113-996-11	TANTAL. CHIP	220uF	20%	4V
C383	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C384	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C385	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C386	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C387	1-164-346-11	CERAMIC CHIP	1uF		16V
C389	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C402	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C403	1-115-156-11	CERAMIC CHIP	1uF		10V
C404	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C405	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C407	1-124-779-00	ELECT CHIP	10uF	20%	16V
C408	1-128-397-21	ELECT CHIP	100uF	20%	16V
C409	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C410	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C411	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C412	1-119-879-11	ELECT	15uF		16V
C413	1-128-397-21	ELECT CHIP	100uF	20%	16V
C414	1-115-156-11	CERAMIC CHIP	1uF		10V
C415	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C416	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C417	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C418	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C419	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C420	1-115-156-11	CERAMIC CHIP	1uF		10V
C421	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C422	1-115-156-11	CERAMIC CHIP	1uF		10V
C423	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C424	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C425	1-115-156-11	CERAMIC CHIP	1uF		10V
C426	1-126-193-11	ELECT	1uF	20%	50V
C427	1-115-156-11	CERAMIC CHIP	1uF		10V
C428	1-119-879-11	ELECT	15uF		16V
C429	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C430	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C431	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C433	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C434	1-117-720-11	CERAMIC CHIP	4.7uF		10V
C435	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C436	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C437	1-117-190-11	ELECT CHIP	10uF	20%	10V
C438	1-164-346-11	CERAMIC CHIP	1uF		16V
C439	1-128-397-21	ELECT CHIP	100uF	20%	16V
C440	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C441	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C442	1-117-190-11	ELECT CHIP	10uF	20%	10V
C443	1-164-346-11	CERAMIC CHIP	1uF		16V
C444	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C445	1-164-346-11	CERAMIC CHIP	1uF		16V
C446	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C447	1-164-346-11	CERAMIC CHIP	1uF		16V
C448	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C449	1-113-500-11	TANTAL. CHIP	100uF	20%	10V
C450	1-117-190-11	ELECT CHIP	10uF	20%	10V
C451	1-164-346-11	CERAMIC CHIP	1uF		16V
C452	1-113-500-11	TANTAL. CHIP	100uF	20%	10V
C453	1-164-346-11	CERAMIC CHIP	1uF		16V
C454	1-113-500-11	TANTAL. CHIP	100uF	20%	10V
C455	1-164-346-11	CERAMIC CHIP	1uF		16V
C456	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C457	1-115-581-11	TANTAL. CHIP	100uF	20%	16V

Ref. No.	Part No.	Description			Remarks
C458	1-117-190-11	ELECT CHIP	10uF	20%	10V
C459	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C460	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C461	1-115-156-11	CERAMIC CHIP	1uF		10V
C462	1-115-156-11	CERAMIC CHIP	1uF		10V
C463	1-115-156-11	CERAMIC CHIP	1uF		10V
C465	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C467	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C468	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C469	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C470	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C471	1-124-779-00	ELECT CHIP	10uF	20%	16V
C491	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C492	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C493	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C601	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C602	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C603	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C604	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C605	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C606	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C607	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C610	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C611	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C612	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C614	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C616	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C617	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C618	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C619	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C620	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C621	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C622	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C623	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C624	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C625	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C626	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C627	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C628	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C630	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C631	1-119-667-11	CERAMIC CHIP	22uF		10V
C632	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C633	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C635	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C636	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C638	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C640	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C641	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C642	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C643	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C651	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C652	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C653	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C654	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C657	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C658	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C659	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C660	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C661	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C662	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C663	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C664	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C665	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C666	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C667	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C668	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C669	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C670	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C671	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C672	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C673	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C674	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C675	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C676	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C677	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C678	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C679	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C680	1-135-148-21	TANTAL. CHIP	1.5uF	20%	16V
C681	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C682	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C683	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C684	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C685	1-115-156-11	CERAMIC CHIP	1uF		10V
C686	1-115-156-11	CERAMIC CHIP	1uF		10V
C687	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C688	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C689	1-126-204-11	ELECT CHIP	47uF	20%	16V
C690	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C691	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C692	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C693	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C694	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C696	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C698	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C699	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C700	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C701	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C702	1-126-204-11	ELECT CHIP	47uF	20%	16V
C703	1-135-148-21	TANTAL. CHIP	1.5uF	20%	16V
C704	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C705	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C706	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C707	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C708	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C732	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C733	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C734	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C736	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C737	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C738	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C751	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C752	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C753	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C754	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C755	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C756	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C757	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C758	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C760	1-164-156-11	CERAMIC CHIP	0.1uF		25V

MAIN

Ref. No.	Part No.	Description			Remarks
C761	1-164-379-11	CERAMIC CHIP	43PF	5%	50V
C764	1-117-370-11	CERAMIC CHIP	10uF		10V
C765	1-117-370-11	CERAMIC CHIP	10uF		10V
C801	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C802	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C803	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C804	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C805	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C806	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C807	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C808	1-164-346-11	CERAMIC CHIP	1uF		16V
C809	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C810	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C811	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C812	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C813	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C814	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C815	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C816	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C817	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C818	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C819	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C820	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C821	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C823	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C824	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C825	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C826	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C827	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C829	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C830	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C831	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C833	1-119-667-11	CERAMIC CHIP	22uF		10V
C834	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C836	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C841	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C901	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C902	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C903	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C904	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C905	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C906	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C909	1-164-156-11	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN001	1-691-384-11	CONNECTOR, FFC/FPC 20P			
CN002	1-691-380-21	CONNECTOR, FFC/FPC 16P			
CN401	1-750-491-31	PIN, CONNECTOR (PC BOARD) 3P			
CN402	1-750-490-11	PIN, CONNECTOR (PC BOARD) 2P			
CN452	1-784-288-21	CONNECTOR, BOARD TO BOARD 6P			
CN453	1-784-293-21	CONNECTOR, BOARD TO BOARD 40P			
CN455	1-691-386-11	CONNECTOR, FFC/FPC 22P			
CN651	1-770-036-11	CONNECTOR, FPC/FFC 5P			
CN652	1-691-348-11	CONNECTOR, FFC/FPC (ZIF) 10P			
CN751	1-784-294-11	PIN, CONNECTOR (PC BOARD) 50P			
CN801	1-766-210-21	HOUSING, CONNECTOR 8P			
CN802	1-573-290-21	PIN, CONNECTOR (1.5MM) (SMD)4P			
CN803	1-784-290-21	CONNECTOR, FFC/FPC (ZIF) 33P			

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D001	8-719-016-74	DIODE 1SS352-TPH3	
D002	8-719-404-49	DIODE MA111-TX	
D101	8-719-065-78	DIODE MAZF12000LS0	
D102	8-719-065-78	DIODE MAZF12000LS0	
D103	8-719-065-78	DIODE MAZF12000LS0	
D104	8-719-065-78	DIODE MAZF12000LS0	
D201	8-719-065-78	DIODE MAZF12000LS0	
D202	8-719-065-78	DIODE MAZF12000LS0	
D203	8-719-065-78	DIODE MAZF12000LS0	
D204	8-719-065-78	DIODE MAZF12000LS0	
D302	8-719-065-78	DIODE MAZF12000LS0	
D303	8-719-065-78	DIODE MAZF12000LS0	
D304	8-719-065-78	DIODE MAZF12000LS0	
D305	8-719-065-78	DIODE MAZF12000LS0	
D308	8-719-065-78	DIODE MAZF12000LS0	
D309	8-719-065-78	DIODE MAZF12000LS0	
D312	8-719-065-78	DIODE MAZF12000LS0	
D313	8-719-065-78	DIODE MAZF12000LS0	
D318	8-719-065-78	DIODE MAZF12000LS0	
D319	8-719-065-78	DIODE MAZF12000LS0	
D320	8-719-065-78	DIODE MAZF12000LS0	
D321	8-719-065-78	DIODE MAZF12000LS0	
D322	8-719-941-86	DIODE DAN202UT106	
D401	8-719-062-22	DIODE SB30-03P-TD	
D402	8-719-017-91	DIODE MA8160-TX	
D403	8-719-017-91	DIODE MA8160-TX	
D404	8-719-062-22	DIODE SB30-03P-TD	
D405	8-719-977-22	DIODE UDZ-TE-17-9.1B	
D406	8-719-404-49	DIODE MA111-TX	
D407	8-719-313-73	DIODE SFPB-52V	
D408	8-719-974-51	DIODE SB20-03P-TD	
D409	8-719-974-51	DIODE SB20-03P-TD	
D410	8-719-938-78	DIODE SB10-05PCP-TD	
D411	8-719-974-51	DIODE SB20-03P-TD	
D412	8-719-974-51	DIODE SB20-03P-TD	
D451	8-719-988-78	DIODE SB007W03Q-TL	
D452	8-719-065-78	DIODE MAZF12000LS0	
D453	8-719-065-78	DIODE MAZF12000LS0	
D454	8-719-065-78	DIODE MAZF12000LS0	
D455	8-719-065-78	DIODE MAZF12000LS0	
D601	8-719-016-74	DIODE 1SS352-TPH3	
D652	8-719-023-69	DIODE SB007T03Q-TL	
D653	8-719-023-69	DIODE SB007T03Q-TL	
D751	8-719-404-49	DIODE MA111-TX	
D752	8-719-313-73	DIODE SFPB-52V	
D801	8-719-016-74	DIODE 1SS352-TPH3	
D802	8-719-941-09	DIODE DAP202UT106	
D803	8-719-404-49	DIODE MA111-TX	
D804	8-719-053-31	DIODE CL-170YG-CD-T	
D805	8-719-053-31	DIODE CL-170YG-CD-T	
D806	8-719-053-31	DIODE CL-170YG-CD-T	
D807	8-719-053-31	DIODE CL-170YG-CD-T	
D808	8-719-053-31	DIODE CL-170YG-CD-T	
D809	8-719-053-31	DIODE CL-170YG-CD-T	
D810	8-719-053-31	DIODE CL-170YG-CD-T	
D811	8-719-053-31	DIODE CL-170YG-CD-T	
D812	8-719-053-31	DIODE CL-170YG-CD-T	
D813	8-719-053-31	DIODE CL-170YG-CD-T	
D814	8-719-053-31	DIODE CL-170YG-CD-T	
D815	8-719-053-31	DIODE CL-170YG-CD-T	

Ref. No.	Part No.	Description	Remarks
D816	8-719-053-31	DIODE CL-170YG-CD-T	
D817	8-719-053-31	DIODE CL-170YG-CD-T	
D818	8-719-053-31	DIODE CL-170YG-CD-T	
D819	8-719-056-66	DIODE 1SS378-TE85L	
D820	8-719-404-49	DIODE MA111-TX	
D821	8-719-404-49	DIODE MA111-TX	
		< FUSE >	
⚠F401	1-533-952-21	FUSE, CHIP 3.15A	
⚠F402	1-533-962-21	FUSE, CHIP 4A	
		< FERRITE BEAD >	
FB107	1-414-228-11	INDUCTOR CHIP 0UH	
FB108	1-414-595-11	INDUCTOR CHIP 0UH	
FB109	1-216-864-11	METAL CHIP 0 5%	1/16W
FB207	1-414-228-11	INDUCTOR CHIP 0UH	
FB208	1-414-595-11	INDUCTOR CHIP 0UH	
FB209	1-216-864-11	METAL CHIP 0 5%	1/16W
FB344	1-216-864-11	METAL CHIP 0 5%	1/16W
FB380	1-414-228-11	INDUCTOR CHIP 0UH	
FB381	1-216-864-11	METAL CHIP 0 5%	1/16W
FB385	1-216-864-11	METAL CHIP 0 5%	1/16W
FB389	1-216-864-11	METAL CHIP 0 5%	1/16W
FB401	1-414-581-21	FERRITE 0UH	
FB402	1-414-581-21	FERRITE 0UH	
FB751	1-414-595-11	INDUCTOR CHIP 0UH	
FB752	1-414-595-11	INDUCTOR CHIP 0UH	
		< IC >	
IC001	8-752-079-86	IC CXA2555Q-T4	
IC002	8-759-701-39	IC NJM2100M (TE2)	
IC003	8-752-080-08	IC CXA2545R	
IC005	8-759-701-39	IC NJM3404AM-TE1	
IC006	8-759-701-39	IC NJM3404AM-TE1	
IC007	8-759-100-93	IC uPC393G2-E2	
IC008	8-759-523-02	IC TC74HC4053AFT (EL)	
IC009	8-759-523-02	IC TC74HC4053AFT (EL)	
IC302	8-759-540-36	IC SN74LVC157APWR	
IC303	8-759-540-36	IC SN74LVC157APWR	
IC304	8-752-382-94	IC CXD3000R	
IC306	8-759-196-96	IC TC7SH08FU-TE85R	
IC307	8-759-496-47	IC PCM1727E-T2	
IC308	8-759-064-36	IC MB88346BPFV-EF	
IC309	8-759-482-30	IC BA3574BFS-E2	
IC310	8-759-242-64	IC TC4W53F (TE12R)	
IC311	8-759-522-11	IC BA7660FS-E2	
IC401	8-759-060-94	IC MB3785APFV-G-BND-ER	
IC403	8-759-496-51	IC S-8323D50MC	
IC404	8-759-512-69	IC S-81350HG-KD-T1	
IC405	8-759-209-97	IC TC4S81F (TE85R)	
IC406	8-759-209-54	IC TC4S01F (TE85R)	
IC407	8-759-337-40	IC NJM2904V (TE2)	
IC451	8-759-196-96	IC TC7SH08FU-TE85R	
* IC452	8-759-524-25	IC TC7WH241FU (TE12R)	
IC601	8-759-465-16	IC CXD2581R	
IC605	8-759-701-39	IC NJM2100M (TE2)	
IC607	8-759-196-93	IC TC7SH00FU-TE85R	
IC610	8-759-058-62	IC TC7S08FU (TE85R)	
IC651	8-759-523-02	IC TC74HC4053AFT (EL)	

Ref. No.	Part No.	Description	Remarks
IC652	8-759-523-02	IC TC74HC4053AFT (EL)	
IC653	8-759-701-39	IC NJM2100M (TE2)	
IC654	8-759-523-03	IC TC74HC4066AFT (EL)	
IC655	8-759-701-39	IC NJM2100M (TE2)	
IC656	8-759-701-39	IC NJM2100M (TE2)	
IC657	8-759-058-60	IC TC7SU04FU (TE85R)	
IC658	8-759-161-75	IC NJM2112V (TE2)	
IC659	8-759-490-72	IC MPC17A29VMEL	
IC660	8-759-298-92	IC MPC1719LFU	
IC661	8-759-031-84	IC SC7S04FER	
IC662	8-759-257-96	IC TC7S14FU (TE85R)	
IC663	8-759-257-96	IC TC7S14FU (TE85R)	
IC701	8-759-058-60	IC TC7SU04FU (TE85R)	
IC702	8-752-389-06	IC CXD1864R	
IC704	8-759-523-03	IC TC74HC4066AFT (EL)	
IC705	8-759-538-54	IC KM416C1200BT-6T	
IC751	8-759-368-65	IC SYM53CF96-2	
IC752	8-759-388-42	IC BH9595FP-Y-E2	
IC801	8-759-569-96	IC HD6432355A05F	
IC802	8-759-701-39	IC NJM3404AM-TE1	
IC803	8-759-523-00	IC TC74HC4051AFT (EL)	
IC804	8-759-523-00	IC TC74HC4051AFT (EL)	
IC805	8-759-523-02	IC TC74HC4053AFT (EL)	
IC806	8-759-465-98	IC BU9728AKV-E2	
IC807	8-759-524-05	IC TC74VHC126FT (EL)	
IC808	8-759-580-86	IC MBM29F200BA-70PFTN-FK-2	
IC809	8-759-474-95	IC RN5VD42AA-TL	
IC810	8-759-465-17	IC BU6248KV	
IC811	8-752-386-43	IC CXD1862Q	
IC812	8-759-540-24	IC SN74LV138PWR	
IC813	8-759-396-27	IC SN74LV74PW-E20	
IC814	8-759-524-51	IC TC74VHC573FT (EL)	
IC901	8-759-496-44	IC HD6412240FA10	
IC902	8-759-363-26	IC RN5VD28AA-TL	
IC903	8-759-571-98	IC MBM29LV400B-10PFTN-C1	
IC904	8-759-539-50	IC KM68V1000BLT-7LK	
IC905	8-759-539-51	IC BR9010FV-E2	
IC906	8-752-086-84	IC CXA2570N-T4	
IC907	8-759-710-79	IC NJM2107F-TE2	
		< JACK >	
J301	1-565-287-11	JACK (PHONES)	
J302	1-784-292-11	CONNECTOR, MINIATURE DIN 4P	(S VIDEO OUT)
J303	1-784-291-11	JACK (SMALL TYPE) 4P (A/V OUT)	
J401	1-778-380-11	JACK,DC(POLARITY UNIFIED TYPE) (DCIN 10V)	
J451	8-759-266-40	IC GP1F362T (PCM/DOLBY DIGITAL)	
		< JUMPER RESISTOR >	
JR763	1-216-864-11	METAL CHIP 0 5%	1/16W
JR764	1-216-864-11	METAL CHIP 0 5%	1/16W
JR765	1-216-864-11	METAL CHIP 0 5%	1/16W
JR766	1-216-864-11	METAL CHIP 0 5%	1/16W
JR767	1-216-864-11	METAL CHIP 0 5%	1/16W
JR768	1-216-864-11	METAL CHIP 0 5%	1/16W
JR769	1-216-864-11	METAL CHIP 0 5%	1/16W
JR770	1-216-864-11	METAL CHIP 0 5%	1/16W
JR771	1-216-864-11	METAL CHIP 0 5%	1/16W
JR772	1-216-864-11	METAL CHIP 0 5%	1/16W

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN

Ref. No.	Part No.	Description			Remarks
JR773	1-216-864-11	METAL CHIP	0	5%	1/16W
JR774	1-216-864-11	METAL CHIP	0	5%	1/16W
JR775	1-216-864-11	METAL CHIP	0	5%	1/16W
JR776	1-216-864-11	METAL CHIP	0	5%	1/16W
JR777	1-216-864-11	METAL CHIP	0	5%	1/16W
JR778	1-216-864-11	METAL CHIP	0	5%	1/16W
JR779	1-216-864-11	METAL CHIP	0	5%	1/16W
JR780	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COIL >			
L001	1-412-029-11	INDUCTOR CHIP	10uH		
L002	1-412-029-11	INDUCTOR CHIP	10uH		
L003	1-233-736-21	FILTER, EMI			
L004	1-233-736-21	FILTER, EMI			
L005	1-412-029-11	INDUCTOR CHIP	10uH		
L006	1-412-029-11	INDUCTOR CHIP	10uH		
L007	1-412-029-11	INDUCTOR CHIP	10uH		
L301	1-412-006-31	INDUCTOR CHIP	10uH		
L302	1-412-029-11	INDUCTOR CHIP	10uH		
L303	1-412-029-11	INDUCTOR CHIP	10uH		
L304	1-412-029-11	INDUCTOR CHIP	10uH		
L305	1-412-029-11	INDUCTOR CHIP	10uH		
L401	1-411-315-21	INDUCTOR	68uH		
L402	1-414-993-21	INDUCTOR	0uH		
L403	1-414-993-21	INDUCTOR	0uH		
L404	1-411-775-11	INDUCTOR	47uH		
L405	1-414-993-21	INDUCTOR	0uH		
L406	1-411-939-11	INDUCTOR	47uH		
L407	1-412-029-11	INDUCTOR CHIP	10uH		
L408	1-411-939-11	INDUCTOR	47uH		
L409	1-416-514-11	INDUCTOR	22uH		
L651	1-412-039-51	INDUCTOR CHIP	100uH		
L652	1-412-039-51	INDUCTOR CHIP	100uH		
L653	1-411-737-21	INDUCTOR	47uH		
L654	1-412-039-51	INDUCTOR CHIP	100uH		
L655	1-412-039-51	INDUCTOR CHIP	100uH		
L751	1-412-029-11	INDUCTOR CHIP	10uH		
L752	1-412-029-11	INDUCTOR CHIP	10uH		
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-803-010-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< PILOT LAMP >			
PL901	1-454-819-11	SOLENOID, PLUNGER			
		< TRANSISTOR >			
Q001	8-729-922-10	TRANSISTOR	2SA1577-T106-R		
Q002	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q003	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q004	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q005	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q006	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q101	8-729-420-74	TRANSISTOR	2SD1328-RST-TX		
Q201	8-729-420-74	TRANSISTOR	2SD1328-RST-TX		
Q303	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q304	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q305	8-729-903-10	TRANSISTOR	FMW1-T-148		
Q306	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q307	8-729-930-00	TRANSISTOR	UMD2-TR		
Q308	8-729-904-86	TRANSISTOR	2SB1197K-T-146-Q		
Q309	8-729-029-06	TRANSISTOR	DTC124EUA-T106		

Ref. No.	Part No.	Description			Remarks
Q310	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q403	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q404	8-729-019-91	TRANSISTOR	2SJ238-TE12L		
Q405	8-729-427-74	TRANSISTOR	HN1B04FU-YGR-TE85R		
Q406	8-729-043-75	TRANSISTOR	MMSF3P02HDR2		
Q407	8-729-427-74	TRANSISTOR	HN1B04FU-YGR-TE85R		
Q408	8-729-043-75	TRANSISTOR	MMSF3P02HDR2		
Q409	8-729-427-74	TRANSISTOR	HN1B04FU-YGR-TE85R		
Q410	8-729-043-75	TRANSISTOR	MMSF3P02HDR2		
Q411	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q412	8-729-427-74	TRANSISTOR	HN1B04FU-YGR-TE85R		
Q413	8-729-040-80	TRANSISTOR	2SK2152-TD		
Q414	8-729-216-22	TRANSISTOR	2SA812-T1-M5M6		
Q415	8-729-930-38	TRANSISTOR	UMS2-TR		
Q416	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q417	8-729-028-90	TRANSISTOR	DTA143ZUA-T106		
Q451	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q452	8-729-930-00	TRANSISTOR	UMD2-TR		
Q651	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q652	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q653	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q701	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q751	8-729-905-15	TRANSISTOR	DTC144WUA-T106		
Q752	8-729-924-39	TRANSISTOR	DTC143XUA-T106		
Q753	8-729-101-07	TRANSISTOR	2SB798-T1DK		
Q801	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q802	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q803	8-729-904-86	TRANSISTOR	2SB1197K-T-146-Q		
Q804	8-729-029-09	TRANSISTOR	DTC143EUA-T106		
Q805	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q806	8-729-904-86	TRANSISTOR	2SB1197K-T-146-Q		
Q807	8-729-029-06	TRANSISTOR	DTC124EUA-T106		
Q810	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q811	8-729-905-35	TRANSISTOR	2SC4081T106R		
Q901	8-729-930-00	TRANSISTOR	UMD2-TR		
Q902	8-729-930-00	TRANSISTOR	UMD2-TR		
		< RESISTOR >			
R001	1-216-025-91	RES,CHIP	100	5%	1/10W
R002	1-216-023-00	METAL CHIP	82	5%	1/10W
R003	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R004	1-216-837-11	METAL CHIP	22K	5%	1/16W
R005	1-216-839-11	METAL CHIP	33K	5%	1/16W
R006	1-216-837-11	METAL CHIP	22K	5%	1/16W
R007	1-216-855-11	METAL CHIP	680K	5%	1/16W
R008	1-216-837-11	METAL CHIP	22K	5%	1/16W
R009	1-216-849-11	METAL CHIP	220K	5%	1/16W
R010	1-216-821-11	METAL CHIP	1K	5%	1/16W
R011	1-216-833-11	METAL CHIP	10K	5%	1/16W
R012	1-216-839-11	METAL CHIP	33K	5%	1/16W
R013	1-216-837-11	METAL CHIP	22K	5%	1/16W
R014	1-216-839-11	METAL CHIP	33K	5%	1/16W
R015	1-216-008-11	RES,CHIP	20	5%	1/10W
R016	1-216-008-11	RES,CHIP	20	5%	1/10W
R017	1-216-843-11	METAL CHIP	68K	5%	1/16W
R018	1-216-008-11	RES,CHIP	20	5%	1/10W
R019	1-216-845-11	METAL CHIP	100K	5%	1/16W
R020	1-216-008-11	RES,CHIP	20	5%	1/10W

Ref. No.	Part No.	Description			Remarks
R021	1-216-843-11	METAL CHIP	68K	5%	1/16W
R022	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R023	1-216-833-11	METAL CHIP	10K	5%	1/16W
R024	1-216-837-11	METAL CHIP	22K	5%	1/16W
R025	1-216-833-11	METAL CHIP	10K	5%	1/16W
R026	1-216-833-11	METAL CHIP	10K	5%	1/16W
R027	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R028	1-216-864-11	METAL CHIP	0	5%	1/16W
R029	1-216-864-11	METAL CHIP	0	5%	1/16W
R030	1-216-864-11	METAL CHIP	0	5%	1/16W
R031	1-216-864-11	METAL CHIP	0	5%	1/16W
R032	1-216-809-11	METAL CHIP	100	5%	1/16W
R033	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R034	1-216-864-11	METAL CHIP	0	5%	1/16W
R035	1-216-864-11	METAL CHIP	0	5%	1/16W
R036	1-216-833-11	METAL CHIP	10K	5%	1/16W
R037	1-216-833-11	METAL CHIP	10K	5%	1/16W
R038	1-216-833-11	METAL CHIP	10K	5%	1/16W
R039	1-216-835-11	METAL CHIP	15K	5%	1/16W
R040	1-216-837-11	METAL CHIP	22K	5%	1/16W
R041	1-216-837-11	METAL CHIP	22K	5%	1/16W
R042	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R043	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R044	1-216-864-11	METAL CHIP	0	5%	1/16W
R045	1-216-833-11	METAL CHIP	10K	5%	1/16W
R046	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R047	1-216-833-11	METAL CHIP	10K	5%	1/16W
R048	1-216-834-11	METAL CHIP	12K	5%	1/16W
R049	1-216-864-11	METAL CHIP	0	5%	1/16W
R050	1-216-864-11	METAL CHIP	0	5%	1/16W
R052	1-216-837-11	METAL CHIP	22K	5%	1/16W
R053	1-216-844-11	METAL CHIP	82K	5%	1/16W
R054	1-216-864-11	METAL CHIP	0	5%	1/16W
R055	1-216-833-11	METAL CHIP	10K	5%	1/16W
R056	1-218-272-11	RES,CHIP	5.1K	5%	1/16W
R057	1-216-833-11	METAL CHIP	10K	5%	1/16W
R060	1-216-864-11	METAL CHIP	0	5%	1/16W
R061	1-216-839-11	METAL CHIP	33K	5%	1/16W
R062	1-216-821-11	METAL CHIP	1K	5%	1/16W
R063	1-216-864-11	METAL CHIP	0	5%	1/16W
R066	1-216-864-11	METAL CHIP	0	5%	1/16W
R068	1-216-833-11	METAL CHIP	10K	5%	1/16W
R069	1-216-849-11	METAL CHIP	220K	5%	1/16W
R070	1-216-833-11	METAL CHIP	10K	5%	1/16W
R071	1-216-854-11	METAL CHIP	560K	5%	1/16W
R072	1-216-864-11	METAL CHIP	0	5%	1/16W
R074	1-216-821-11	METAL CHIP	1K	5%	1/16W
R076	1-216-841-11	METAL CHIP	47K	5%	1/16W
R077	1-216-845-11	METAL CHIP	100K	5%	1/16W
R078	1-216-821-11	METAL CHIP	1K	5%	1/16W
R079	1-216-821-11	METAL CHIP	1K	5%	1/16W
R080	1-216-845-11	METAL CHIP	100K	5%	1/16W
R081	1-216-845-11	METAL CHIP	100K	5%	1/16W
R082	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R083	1-216-833-11	METAL CHIP	10K	5%	1/16W
R084	1-216-864-11	METAL CHIP	0	5%	1/16W
R085	1-216-864-11	METAL CHIP	0	5%	1/16W
R086	1-216-864-11	METAL CHIP	0	5%	1/16W
R088	1-216-846-11	METAL CHIP	120K	5%	1/16W
R089	1-216-846-11	METAL CHIP	120K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R090	1-216-851-11	METAL CHIP	330K	5%	1/16W
R091	1-216-864-11	METAL CHIP	0	5%	1/16W
R093	1-216-857-11	METAL CHIP	1M	5%	1/16W
R094	1-216-864-11	METAL CHIP	0	5%	1/16W
R098	1-216-837-11	METAL CHIP	22K	5%	1/16W
R101	1-216-845-11	METAL CHIP	100K	5%	1/16W
R102	1-216-817-11	METAL CHIP	470	5%	1/16W
R103	1-216-817-11	METAL CHIP	470	5%	1/16W
R104	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R105	1-216-839-11	METAL CHIP	33K	5%	1/16W
R106	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R201	1-216-845-11	METAL CHIP	100K	5%	1/16W
R202	1-216-817-11	METAL CHIP	470	5%	1/16W
R203	1-216-817-11	METAL CHIP	470	5%	1/16W
R204	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R205	1-216-839-11	METAL CHIP	33K	5%	1/16W
R206	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R301	1-216-864-11	METAL CHIP	0	5%	1/16W
R302	1-216-864-11	METAL CHIP	0	5%	1/16W
R303	1-216-864-11	METAL CHIP	0	5%	1/16W
R304	1-216-833-11	METAL CHIP	10K	5%	1/16W
R306	1-216-845-11	METAL CHIP	100K	5%	1/16W
R307	1-216-845-11	METAL CHIP	100K	5%	1/16W
R308	1-216-837-11	METAL CHIP	22K	5%	1/16W
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W
R316	1-216-821-11	METAL CHIP	1K	5%	1/16W
R317	1-216-821-11	METAL CHIP	1K	5%	1/16W
R318	1-216-821-11	METAL CHIP	1K	5%	1/16W
R319	1-216-821-11	METAL CHIP	1K	5%	1/16W
R320	1-216-821-11	METAL CHIP	1K	5%	1/16W
R321	1-216-845-11	METAL CHIP	100K	5%	1/16W
R322	1-216-834-11	METAL CHIP	12K	5%	1/16W
R323	1-216-864-11	METAL CHIP	0	5%	1/16W
R324	1-216-834-11	METAL CHIP	12K	5%	1/16W
R326	1-216-839-11	METAL CHIP	33K	5%	1/16W
R327	1-216-834-11	METAL CHIP	12K	5%	1/16W
R331	1-216-847-11	METAL CHIP	150K	5%	1/16W
R333	1-216-852-11	METAL CHIP	390K	5%	1/16W
R334	1-216-797-11	METAL CHIP	10	5%	1/16W
R335	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R336	1-216-833-11	METAL CHIP	10K	5%	1/16W
R337	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R338	1-216-864-11	METAL CHIP	0	5%	1/16W
R339	1-216-845-11	METAL CHIP	100K	5%	1/16W
R340	1-216-821-11	METAL CHIP	1K	5%	1/16W
R342	1-216-845-11	METAL CHIP	100K	5%	1/16W
R343	1-216-853-11	METAL CHIP	470K	5%	1/16W
R345	1-216-864-11	METAL CHIP	0	5%	1/16W
R346	1-216-833-11	METAL CHIP	10K	5%	1/16W
R347	1-218-287-11	RES,CHIP	200	5%	1/16W
R350	1-216-857-11	METAL CHIP	1M	5%	1/16W
R351	1-216-833-11	METAL CHIP	10K	5%	1/16W
R352	1-216-864-11	METAL CHIP	0	5%	1/16W
R353	1-216-864-11	METAL CHIP	0	5%	1/16W
R354	1-216-864-11	METAL CHIP	0	5%	1/16W
R356	1-216-841-11	METAL CHIP	47K	5%	1/16W
R357	1-216-864-11	METAL CHIP	0	5%	1/16W
R358	1-216-844-11	METAL CHIP	82K	5%	1/16W
R361	1-216-864-11	METAL CHIP	0	5%	1/16W
R362	1-216-864-11	METAL CHIP	0	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remarks
R364	1-216-864-11	METAL CHIP	0	5%	1/16W
R368	1-216-864-11	METAL CHIP	0	5%	1/16W
R371	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R372	1-216-821-11	METAL CHIP	1K	5%	1/16W
R373	1-218-862-11	RES,CHIP	4.3K	0.50%	1/16W
R374	1-218-878-11	RES,CHIP	20K	0.50%	1/16W
R376	1-216-833-11	METAL CHIP	10K	5%	1/16W
R378	1-216-833-11	METAL CHIP	10K	5%	1/16W
R379	1-208-755-11	RES,CHIP	75	0.50%	1/10W
R382	1-216-864-11	METAL CHIP	0	5%	1/16W
R384	1-216-864-11	METAL CHIP	0	5%	1/16W
R387	1-216-864-11	METAL CHIP	0	5%	1/16W
R390	1-216-864-11	METAL CHIP	0	5%	1/16W
R391	1-216-864-11	METAL CHIP	0	5%	1/16W
R394	1-216-864-11	METAL CHIP	0	5%	1/16W
R396	1-216-864-11	METAL CHIP	0	5%	1/16W
R397	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R398	1-208-755-11	RES,CHIP	75	0.50%	1/10W
R399	1-208-755-11	RES,CHIP	75	0.50%	1/10W
R401	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R402	1-218-891-11	RES,CHIP	68K	0.50%	1/16W
R403	1-216-821-11	METAL CHIP	1K	5%	1/16W
R404	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R405	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R406	1-216-849-11	METAL CHIP	220K	5%	1/16W
R407	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R408	1-216-835-11	METAL CHIP	15K	5%	1/16W
R409	1-216-821-11	METAL CHIP	1K	5%	1/16W
R410	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R411	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R412	1-216-849-11	METAL CHIP	220K	5%	1/16W
R413	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R414	1-216-839-11	METAL CHIP	33K	5%	1/16W
R415	1-216-023-00	METAL CHIP	82	5%	1/10W
R416	1-216-023-00	METAL CHIP	82	5%	1/10W
R417	1-216-023-00	METAL CHIP	82	5%	1/10W
R418	1-216-023-00	METAL CHIP	82	5%	1/10W
R419	1-216-833-11	METAL CHIP	10K	5%	1/16W
R420	1-216-849-11	METAL CHIP	220K	5%	1/16W
R421	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R422	1-216-821-11	METAL CHIP	1K	5%	1/16W
R423	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R424	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R425	1-216-833-11	METAL CHIP	10K	5%	1/16W
R426	1-216-849-11	METAL CHIP	220K	5%	1/16W
R427	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R428	1-216-821-11	METAL CHIP	1K	5%	1/16W
R429	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R430	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R431	1-216-833-11	METAL CHIP	10K	5%	1/16W
R432	1-216-833-11	METAL CHIP	10K	5%	1/16W
R433	1-216-864-11	METAL CHIP	0	5%	1/16W
R434	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R435	1-216-833-11	METAL CHIP	10K	5%	1/16W
R436	1-216-821-11	METAL CHIP	1K	5%	1/16W
R437	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R438	1-216-805-11	METAL CHIP	47	5%	1/16W
R439	1-216-864-11	METAL CHIP	0	5%	1/16W
R440	1-216-833-11	METAL CHIP	10K	5%	1/16W
R441	1-218-858-11	RES,CHIP	3K	0.50%	1/16W
R442	1-218-847-11	RES,CHIP	1K	0.50%	1/16W
R443	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R444	1-216-805-11	METAL CHIP	47	5%	1/16W
R445	1-216-864-11	METAL CHIP	0	5%	1/16W
R446	1-216-833-11	METAL CHIP	10K	5%	1/16W
R447	1-218-865-11	RES,CHIP	5.6K	0.50%	1/16W
R448	1-218-854-11	RES,CHIP	2K	0.50%	1/16W
R449	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R450	1-216-805-11	METAL CHIP	47	5%	1/16W
R451	1-216-864-11	METAL CHIP	0	5%	1/16W
R452	1-216-833-11	METAL CHIP	10K	5%	1/16W
R453	1-218-863-11	RES,CHIP	4.7K	0.50%	1/16W
R454	1-218-858-11	RES,CHIP	3K	0.50%	1/16W
R455	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R456	1-216-809-11	METAL CHIP	100	5%	1/16W
R457	1-216-797-11	METAL CHIP	10	5%	1/16W
R458	1-216-841-11	METAL CHIP	47K	5%	1/16W
R459	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R460	1-216-833-11	METAL CHIP	10K	5%	1/16W
R461	1-218-871-11	RES,CHIP	10K	0.50%	1/16W
R462	1-218-853-11	RES,CHIP	1.8K	0.50%	1/16W
R463	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R464	1-218-603-91	METAL CHIP	1.2	5%	1W
R465	1-218-603-91	METAL CHIP	1.2	5%	1W
R466	1-218-842-11	RES,CHIP	620	0.50%	1/16W
R467	1-216-833-11	METAL CHIP	10K	5%	1/16W
R468	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R469	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R470	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R471	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R472	1-218-915-11	RES,CHIP	680K	0.50%	1/16W
R473	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R474	1-216-821-11	METAL CHIP	1K	5%	1/16W
R475	1-216-821-11	METAL CHIP	1K	5%	1/16W
R476	1-216-821-11	METAL CHIP	1K	5%	1/16W
R481	1-218-915-11	RES,CHIP	680K	0.50%	1/16W
R482	1-218-903-11	RES,CHIP	220K	0.50%	1/16W
R483	1-216-821-11	METAL CHIP	1K	5%	1/16W
R488	1-216-833-11	METAL CHIP	10K	5%	1/16W
R489	1-216-864-11	METAL CHIP	0	5%	1/16W
R490	1-216-821-11	METAL CHIP	1K	5%	1/16W
R491	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R492	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R493	1-216-837-11	METAL CHIP	22K	5%	1/16W
R494	1-216-837-11	METAL CHIP	22K	5%	1/16W
R496	1-216-836-11	METAL CHIP	18K	5%	1/16W
R601	1-216-864-11	METAL CHIP	0	5%	1/16W
R602	1-216-864-11	METAL CHIP	0	5%	1/16W
R603	1-216-837-11	METAL CHIP	22K	5%	1/16W
R604	1-216-821-11	METAL CHIP	1K	5%	1/16W
R605	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R606	1-216-857-11	METAL CHIP	1M	5%	1/16W
R607	1-216-843-11	METAL CHIP	68K	5%	1/16W
R608	1-216-864-11	METAL CHIP	0	5%	1/16W
R609	1-216-864-11	METAL CHIP	0	5%	1/16W
R610	1-216-847-11	METAL CHIP	150K	5%	1/16W
R611	1-216-864-11	METAL CHIP	0	5%	1/16W
R617	1-216-833-11	METAL CHIP	10K	5%	1/16W
R618	1-216-833-11	METAL CHIP	10K	5%	1/16W
R619	1-218-871-11	RES,CHIP	10K	0.50%	1/16W

Ref. No.	Part No.	Description			Remarks
R620	1-218-843-11	RES,CHIP	680	0.50%	1/16W
R621	1-216-843-11	METAL CHIP	68K	5%	1/16W
R623	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R624	1-216-821-11	METAL CHIP	1K	5%	1/16W
R625	1-216-813-11	METAL CHIP	220	5%	1/16W
R626	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R627	1-216-816-11	METAL CHIP	390	5%	1/16W
R628	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R629	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R630	1-216-853-11	METAL CHIP	470K	5%	1/16W
R631	1-216-864-11	METAL CHIP	0	5%	1/16W
R632	1-216-821-11	METAL CHIP	1K	5%	1/16W
R633	1-216-821-11	METAL CHIP	1K	5%	1/16W
R634	1-216-833-11	METAL CHIP	10K	5%	1/16W
R635	1-216-833-11	METAL CHIP	10K	5%	1/16W
R636	1-216-864-11	METAL CHIP	0	5%	1/16W
R638	1-216-833-11	METAL CHIP	10K	5%	1/16W
R639	1-216-821-11	METAL CHIP	1K	5%	1/16W
R640	1-216-845-11	METAL CHIP	100K	5%	1/16W
R641	1-216-839-11	METAL CHIP	33K	5%	1/16W
R642	1-216-845-11	METAL CHIP	100K	5%	1/16W
R643	1-216-864-11	METAL CHIP	0	5%	1/16W
R644	1-216-833-11	METAL CHIP	10K	5%	1/16W
R645	1-216-833-11	METAL CHIP	10K	5%	1/16W
R646	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R647	1-216-833-11	METAL CHIP	10K	5%	1/16W
R648	1-216-845-11	METAL CHIP	100K	5%	1/16W
R649	1-216-833-11	METAL CHIP	10K	5%	1/16W
R650	1-216-864-11	METAL CHIP	0	5%	1/16W
R651	1-216-841-11	METAL CHIP	47K	5%	1/16W
R653	1-216-841-11	METAL CHIP	47K	5%	1/16W
R656	1-216-833-11	METAL CHIP	10K	5%	1/16W
R657	1-216-839-11	METAL CHIP	33K	5%	1/16W
R658	1-216-849-11	METAL CHIP	220K	5%	1/16W
R659	1-216-849-11	METAL CHIP	220K	5%	1/16W
R660	1-216-837-11	METAL CHIP	22K	5%	1/16W
R661	1-216-837-11	METAL CHIP	22K	5%	1/16W
R662	1-216-833-11	METAL CHIP	10K	5%	1/16W
R663	1-216-864-11	METAL CHIP	0	5%	1/16W
R665	1-216-852-11	METAL CHIP	390K	5%	1/16W
R666	1-216-847-11	METAL CHIP	150K	5%	1/16W
R667	1-216-864-11	METAL CHIP	0	5%	1/16W
R668	1-216-864-11	METAL CHIP	0	5%	1/16W
R669	1-216-833-11	METAL CHIP	10K	5%	1/16W
R670	1-216-864-11	METAL CHIP	0	5%	1/16W
R671	1-216-833-11	METAL CHIP	10K	5%	1/16W
R672	1-216-833-11	METAL CHIP	10K	5%	1/16W
R673	1-216-833-11	METAL CHIP	10K	5%	1/16W
R674	1-216-833-11	METAL CHIP	10K	5%	1/16W
R675	1-216-833-11	METAL CHIP	10K	5%	1/16W
R676	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R677	1-216-841-11	METAL CHIP	47K	5%	1/16W
R678	1-216-833-11	METAL CHIP	10K	5%	1/16W
R679	1-216-833-11	METAL CHIP	10K	5%	1/16W
R680	1-216-834-11	METAL CHIP	12K	5%	1/16W
R681	1-216-833-11	METAL CHIP	10K	5%	1/16W
R682	1-216-835-11	METAL CHIP	15K	5%	1/16W
R683	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R684	1-216-833-11	METAL CHIP	10K	5%	1/16W
R685	1-216-864-11	METAL CHIP	0	5%	1/16W
R686	1-216-833-11	METAL CHIP	10K	5%	1/16W
R687	1-216-833-11	METAL CHIP	10K	5%	1/16W
R688	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R689	1-216-864-11	METAL CHIP	0	5%	1/16W
R690	1-216-816-11	METAL CHIP	390	5%	1/16W
R692	1-216-864-11	METAL CHIP	0	5%	1/16W
R693	1-216-833-11	METAL CHIP	10K	5%	1/16W
R695	1-216-864-11	METAL CHIP	0	5%	1/16W
R698	1-216-833-11	METAL CHIP	10K	5%	1/16W
R700	1-216-833-11	METAL CHIP	10K	5%	1/16W
R702	1-216-833-11	METAL CHIP	10K	5%	1/16W
R704	1-216-833-11	METAL CHIP	10K	5%	1/16W
R706	1-216-857-11	METAL CHIP	1M	5%	1/16W
R707	1-216-821-11	METAL CHIP	1K	5%	1/16W
R711	1-218-272-11	RES,CHIP	5.1K	5%	1/16W
R712	1-218-272-11	RES,CHIP	5.1K	5%	1/16W
R713	1-218-272-11	RES,CHIP	5.1K	5%	1/16W
R714	1-218-272-11	RES,CHIP	5.1K	5%	1/16W
R715	1-216-833-11	METAL CHIP	10K	5%	1/16W
R716	1-216-833-11	METAL CHIP	10K	5%	1/16W
R717	1-216-833-11	METAL CHIP	10K	5%	1/16W
R718	1-216-833-11	METAL CHIP	10K	5%	1/16W
R719	1-216-833-11	METAL CHIP	10K	5%	1/16W
R724	1-216-833-11	METAL CHIP	10K	5%	1/16W
R725	1-216-797-11	METAL CHIP	10	5%	1/16W
R726	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R727	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R728	1-216-864-11	METAL CHIP	0	5%	1/16W
R729	1-216-797-11	METAL CHIP	10	5%	1/16W
R731	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R732	1-216-864-11	METAL CHIP	0	5%	1/16W
R734	1-216-864-11	METAL CHIP	0	5%	1/16W
R735	1-216-864-11	METAL CHIP	0	5%	1/16W
R742	1-216-833-11	METAL CHIP	10K	5%	1/16W
R753	1-216-864-11	METAL CHIP	0	5%	1/16W
R754	1-216-857-11	METAL CHIP	1M	5%	1/16W
R755	1-216-864-11	METAL CHIP	0	5%	1/16W
R756	1-216-864-11	METAL CHIP	0	5%	1/16W
R757	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R758	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R759	1-216-845-11	METAL CHIP	100K	5%	1/16W
R760	1-216-845-11	METAL CHIP	100K	5%	1/16W
R761	1-216-833-11	METAL CHIP	10K	5%	1/16W
R770	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R771	1-216-803-11	METAL CHIP	33	5%	1/16W
R772	1-216-803-11	METAL CHIP	33	5%	1/16W
R782	1-216-833-11	METAL CHIP	10K	5%	1/16W
R783	1-216-864-11	METAL CHIP	0	5%	1/16W
R784	1-218-882-11	RES,CHIP	30K	0.50%	1/16W
R785	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R786	1-218-875-11	RES,CHIP	15K	0.50%	1/16W
R787	1-218-875-11	RES,CHIP	15K	0.50%	1/16W
R788	1-218-882-11	RES,CHIP	30K	0.50%	1/16W
R789	1-218-882-11	RES,CHIP	30K	0.50%	1/16W
R790	1-218-882-11	RES,CHIP	30K	0.50%	1/16W
R791	1-216-821-11	METAL CHIP	1K	5%	1/16W
R792	1-216-817-11	METAL CHIP	470	5%	1/16W
R795	1-216-821-11	METAL CHIP	1K	5%	1/16W
R796	1-218-882-11	RES,CHIP	30K	0.50%	1/16W
R801	1-216-833-11	METAL CHIP	10K	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remarks
R802	1-216-847-11	METAL CHIP	150K	5%	1/16W
R803	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R804	1-216-864-11	METAL CHIP	0	5%	1/16W
R805	1-216-864-11	METAL CHIP	0	5%	1/16W
R806	1-216-833-11	METAL CHIP	10K	5%	1/16W
R807	1-216-864-11	METAL CHIP	0	5%	1/16W
R808	1-216-864-11	METAL CHIP	0	5%	1/16W
R809	1-216-864-11	METAL CHIP	0	5%	1/16W
R810	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R812	1-216-864-11	METAL CHIP	0	5%	1/16W
R813	1-216-864-11	METAL CHIP	0	5%	1/16W
R814	1-216-864-11	METAL CHIP	0	5%	1/16W
R815	1-216-857-11	METAL CHIP	1M	5%	1/16W
R816	1-216-821-11	METAL CHIP	1K	5%	1/16W
R817	1-216-857-11	METAL CHIP	1M	5%	1/16W
R818	1-216-833-11	METAL CHIP	10K	5%	1/16W
R819	1-216-857-11	METAL CHIP	1M	5%	1/16W
R820	1-216-845-11	METAL CHIP	100K	5%	1/16W
R821	1-216-857-11	METAL CHIP	1M	5%	1/16W
R822	1-216-821-11	METAL CHIP	1K	5%	1/16W
R823	1-216-857-11	METAL CHIP	1M	5%	1/16W
R824	1-216-864-11	METAL CHIP	0	5%	1/16W
R825	1-216-864-11	METAL CHIP	0	5%	1/16W
R826	1-216-837-11	METAL CHIP	22K	5%	1/16W
R827	1-216-845-11	METAL CHIP	100K	5%	1/16W
R828	1-216-864-11	METAL CHIP	0	5%	1/16W
R829	1-216-853-11	METAL CHIP	470K	5%	1/16W
R830	1-216-837-11	METAL CHIP	22K	5%	1/16W
R831	1-216-837-11	METAL CHIP	22K	5%	1/16W
R832	1-216-835-11	METAL CHIP	15K	5%	1/16W
R833	1-216-833-11	METAL CHIP	10K	5%	1/16W
R834	1-216-864-11	METAL CHIP	0	5%	1/16W
R835	1-216-864-11	METAL CHIP	0	5%	1/16W
R836	1-216-845-11	METAL CHIP	100K	5%	1/16W
R837	1-216-857-11	METAL CHIP	1M	5%	1/16W
R838	1-216-857-11	METAL CHIP	1M	5%	1/16W
R839	1-216-833-11	METAL CHIP	10K	5%	1/16W
R840	1-216-821-11	METAL CHIP	1K	5%	1/16W
R841	1-216-864-11	METAL CHIP	0	5%	1/16W
R842	1-216-833-11	METAL CHIP	10K	5%	1/16W
R843	1-216-857-11	METAL CHIP	1M	5%	1/16W
R844	1-216-864-11	METAL CHIP	0	5%	1/16W
R846	1-216-841-11	METAL CHIP	47K	5%	1/16W
R847	1-216-864-11	METAL CHIP	0	5%	1/16W
R848	1-216-864-11	METAL CHIP	0	5%	1/16W
R849	1-216-821-11	METAL CHIP	1K	5%	1/16W
R850	1-216-821-11	METAL CHIP	1K	5%	1/16W
R851	1-216-833-11	METAL CHIP	10K	5%	1/16W
R852	1-216-833-11	METAL CHIP	10K	5%	1/16W
R853	1-216-864-11	METAL CHIP	0	5%	1/16W
R854	1-216-833-11	METAL CHIP	10K	5%	1/16W
R855	1-216-821-11	METAL CHIP	1K	5%	1/16W
R856	1-216-833-11	METAL CHIP	10K	5%	1/16W
R857	1-216-864-11	METAL CHIP	0	5%	1/16W
R858	1-216-814-11	METAL CHIP	270	5%	1/16W
R859	1-216-814-11	METAL CHIP	270	5%	1/16W
R860	1-216-864-11	METAL CHIP	0	5%	1/16W
R861	1-216-857-11	METAL CHIP	1M	5%	1/16W
R862	1-216-857-11	METAL CHIP	1M	5%	1/16W
R863	1-216-814-11	METAL CHIP	270	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R864	1-216-814-11	METAL CHIP	270	5%	1/16W
R865	1-216-814-11	METAL CHIP	270	5%	1/16W
R866	1-216-864-11	METAL CHIP	0	5%	1/16W
R867	1-216-814-11	METAL CHIP	270	5%	1/16W
R868	1-216-814-11	METAL CHIP	270	5%	1/16W
R869	1-216-814-11	METAL CHIP	270	5%	1/16W
R870	1-216-814-11	METAL CHIP	270	5%	1/16W
R871	1-216-814-11	METAL CHIP	270	5%	1/16W
R873	1-216-857-11	METAL CHIP	1M	5%	1/16W
R874	1-216-809-11	METAL CHIP	100	5%	1/16W
R875	1-216-814-11	METAL CHIP	270	5%	1/16W
R878	1-216-811-11	METAL CHIP	150	5%	1/16W
R879	1-216-814-11	METAL CHIP	270	5%	1/16W
R880	1-216-864-11	METAL CHIP	0	5%	1/16W
R881	1-216-814-11	METAL CHIP	270	5%	1/16W
R882	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R883	1-216-814-11	METAL CHIP	270	5%	1/16W
R884	1-216-814-11	METAL CHIP	270	5%	1/16W
R885	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R886	1-216-814-11	METAL CHIP	270	5%	1/16W
R887	1-216-815-11	METAL CHIP	330	5%	1/16W
R888	1-216-864-11	METAL CHIP	0	5%	1/16W
R889	1-216-821-11	METAL CHIP	1K	5%	1/16W
R892	1-216-803-11	METAL CHIP	33	5%	1/16W
R893	1-216-803-11	METAL CHIP	33	5%	1/16W
R894	1-216-809-11	METAL CHIP	100	5%	1/16W
R895	1-216-814-11	METAL CHIP	270	5%	1/16W
R896	1-216-864-11	METAL CHIP	0	5%	1/16W
R897	1-216-833-11	METAL CHIP	10K	5%	1/16W
R904	1-216-864-11	METAL CHIP	0	5%	1/16W
R906	1-216-864-11	METAL CHIP	0	5%	1/16W
R907	1-216-845-11	METAL CHIP	100K	5%	1/16W
R908	1-216-845-11	METAL CHIP	100K	5%	1/16W
R909	1-216-864-11	METAL CHIP	0	5%	1/16W
R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R912	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R913	1-216-833-11	METAL CHIP	10K	5%	1/16W
R914	1-216-821-11	METAL CHIP	1K	5%	1/16W
R915	1-216-833-11	METAL CHIP	10K	5%	1/16W
R916	1-216-864-11	METAL CHIP	0	5%	1/16W
R917	1-216-857-11	METAL CHIP	1M	5%	1/16W
R918	1-216-833-11	METAL CHIP	10K	5%	1/16W
R919	1-216-833-11	METAL CHIP	10K	5%	1/16W
R920	1-216-833-11	METAL CHIP	10K	5%	1/16W
R921	1-216-833-11	METAL CHIP	10K	5%	1/16W
R922	1-216-833-11	METAL CHIP	10K	5%	1/16W
R923	1-216-864-11	METAL CHIP	0	5%	1/16W
R925	1-216-833-11	METAL CHIP	10K	5%	1/16W
R926	1-216-845-11	METAL CHIP	100K	5%	1/16W
R928	1-216-853-11	METAL CHIP	470K	5%	1/16W
R929	1-216-845-11	METAL CHIP	100K	5%	1/16W
R930	1-216-833-11	METAL CHIP	10K	5%	1/16W
R931	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R934	1-216-864-11	METAL CHIP	0	5%	1/16W
R937	1-216-837-11	METAL CHIP	22K	5%	1/16W
R938	1-218-882-11	RES,CHIP	30K	0.50%	1/16W
R940	1-216-864-11	METAL CHIP	0	5%	1/16W
R951	1-216-845-11	METAL CHIP	100K	5%	1/16W
R952	1-216-845-11	METAL CHIP	100K	5%	1/16W
R954	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R955	1-216-864-11	METAL CHIP	0	5%	1/16W
R957	1-216-833-11	METAL CHIP	10K	5%	1/16W
R958	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R961	1-218-272-11	RES,CHIP	5.1K	5%	1/16W
R962	1-218-873-11	RES,CHIP	12K	0.50%	1/16W
R963	1-216-833-11	METAL CHIP	10K	5%	1/16W
R964	1-216-833-11	METAL CHIP	10K	5%	1/16W
R965	1-216-845-11	METAL CHIP	100K	5%	1/16W
R966	1-216-821-11	METAL CHIP	1K	5%	1/16W
R967	1-218-870-11	RES,CHIP	9.1K	0.50%	1/16W
R968	1-218-864-11	RES,CHIP	5.1K	0.50%	1/16W
R969	1-216-833-11	METAL CHIP	10K	5%	1/16W
R970	1-216-845-11	METAL CHIP	100K	5%	1/16W
R971	1-216-845-11	METAL CHIP	100K	5%	1/16W
R972	1-216-821-11	METAL CHIP	1K	5%	1/16W
R973	1-216-833-11	METAL CHIP	10K	5%	1/16W
R974	1-216-864-11	METAL CHIP	0	5%	1/16W
R989	1-216-864-11	METAL CHIP	0	5%	1/16W
R991	1-216-864-11	METAL CHIP	0	5%	1/16W
R992	1-216-864-11	METAL CHIP	0	5%	1/16W
R993	1-216-833-11	METAL CHIP	10K	5%	1/16W
R994	1-216-857-11	METAL CHIP	1M	5%	1/16W
R996	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VARIABLE RESISTOR >			
RV301	1-225-315-11	RES, VAR, CARBON 10K/10K (VOL)			
RV401	1-241-390-21	RES, ADJ, METAL GLAZE 220			
		< SWITCH >			
S401	1-771-297-11	SWITCH, PUSH			
S751	1-572-922-11	SWITCH, SLIDE (ID:BIT-0)			
S752	1-572-922-11	SWITCH, SLIDE (ID:BIT-1)			
S753	1-572-922-11	SWITCH, SLIDE (ID:BIT-2)			
S801	1-572-499-11	SWITCH, TACTIL (POWER)			
S802	1-771-294-21	SWITCH, PUSH (DOOR OPEN/CLOSE)			
		< VIBRATOR >			
X301	1-767-784-21	VIBRATOR, CRYSTAL 27MHz			
X701	1-767-863-21	VIBRATOR, CERAMIC 40MHz			
X801	1-767-621-11	VIBRATOR, CERAMIC 16.93MHz			
X901	1-767-690-11	VIBRATOR, CERAMIC 10MHz			
*	1-668-456-11	REMOTE BOARD **********			
		< CONNECTOR >			
CN451	1-784-289-21	CONNECTOR, BOARD TO BOARD 6P			
		< IC >			
IC451	8-749-012-17	IC RS-140-T			
		< SWITCH >			
S451	1-771-248-11	SWITCH, TACTILE (OPEN)			

Ref. No.	Part No.	Description			Remarks
		SUB BOARD **********			
		< CAPACITOR >			
C501	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C502	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C504	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C505	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C506	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C508	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C509	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C510	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C511	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C512	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C515	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C516	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C517	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C518	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C519	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C520	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C521	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C522	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C523	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C524	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C525	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C526	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C527	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C528	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C529	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C530	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C531	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C532	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C533	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C534	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C535	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C536	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C537	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C538	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C551	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C552	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C553	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C554	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C555	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C556	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C557	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C558	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C559	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C560	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C561	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C562	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C563	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C564	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C565	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C566	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C567	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C571	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C572	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C573	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C575	1-162-921-11	CERAMIC CHIP	33PF	5%	50V

SUB

Ref. No.	Part No.	Description			Remarks
C576	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C577	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C578	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
		< CONNECTOR >			
CN454	1-691-479-21	CONNECTOR, BOARD TO BOARD 40P			
CN456	1-691-360-11	CONNECTOR, FFC/FPC (ZIF) 22P			
		< DIODE >			
D551	8-719-404-49	DIODE MA111-TX			
		< IC >			
IC501	8-759-534-21	IC MSM54V32256SL-50TS-K			
IC503	8-759-498-43	IC MSM54V16258ASL-45TSK			
IC504	8-759-534-21	IC MSM54V32256SL-50TS-K			
IC508	8-759-271-88	IC TC7SHU04FU-TE85R			
IC509	8-759-496-43	IC ZIVA-DS-LTB3			
IC551	8-759-496-53	IC TMS320AV410			
IC552	8-759-534-30	IC uPD6466GS-511-E2			
IC553	8-759-462-09	IC TLV431AIDBV			
IC555	8-759-396-27	IC SN74LV74PW-E20			
		< COIL >			
L501	1-412-622-51	INDUCTOR	10uH		
L502	1-412-622-51	INDUCTOR	10uH		
L503	1-412-004-31	INDUCTOR CHIP	6.8uH		
L504	1-410-997-22	INDUCTOR CHIP	2.2uH		
L505	1-412-029-11	INDUCTOR CHIP	10uH		
L551	1-410-993-22	INDUCTOR CHIP	1uH		
L552	1-410-993-22	INDUCTOR CHIP	1uH		
L553	1-410-993-22	INDUCTOR CHIP	1uH		
L555	1-412-029-11	INDUCTOR CHIP	10uH		
L556	1-412-029-11	INDUCTOR CHIP	10uH		
		< RESISTOR >			
R501	1-216-821-11	METAL CHIP	1K	5%	1/16W
R502	1-216-864-11	METAL CHIP	0	5%	1/16W
R503	1-216-864-11	METAL CHIP	0	5%	1/16W
R504	1-216-857-11	METAL CHIP	1M	5%	1/16W
R506	1-216-803-11	METAL CHIP	33	5%	1/16W
R507	1-216-803-11	METAL CHIP	33	5%	1/16W
R508	1-216-803-11	METAL CHIP	33	5%	1/16W
R509	1-216-803-11	METAL CHIP	33	5%	1/16W
R510	1-216-803-11	METAL CHIP	33	5%	1/16W
R511	1-216-803-11	METAL CHIP	33	5%	1/16W
R512	1-216-803-11	METAL CHIP	33	5%	1/16W
R513	1-216-803-11	METAL CHIP	33	5%	1/16W
R514	1-216-803-11	METAL CHIP	33	5%	1/16W
R515	1-216-803-11	METAL CHIP	33	5%	1/16W
R516	1-216-803-11	METAL CHIP	33	5%	1/16W
R517	1-216-803-11	METAL CHIP	33	5%	1/16W
R518	1-216-803-11	METAL CHIP	33	5%	1/16W
R519	1-216-803-11	METAL CHIP	33	5%	1/16W
R520	1-216-803-11	METAL CHIP	33	5%	1/16W
R522	1-216-803-11	METAL CHIP	33	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R541	1-216-864-11	METAL CHIP	0	5%	1/16W
R542	1-216-864-11	METAL CHIP	0	5%	1/16W
R543	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-218-851-11	RES,CHIP	1.5K	0.50%	1/16W
R554	1-218-849-11	RES,CHIP	1.2K	0.50%	1/16W
R555	1-216-864-11	METAL CHIP	0	5%	1/16W
R557	1-216-813-11	METAL CHIP	220	5%	1/16W
R558	1-216-813-11	METAL CHIP	220	5%	1/16W
R559	1-216-813-11	METAL CHIP	220	5%	1/16W
R560	1-216-864-11	METAL CHIP	0	5%	1/16W
R561	1-218-851-11	RES,CHIP	1.5K	0.50%	1/16W
R562	1-216-864-11	METAL CHIP	0	5%	1/16W
R565	1-216-833-11	METAL CHIP	10K	5%	1/16W
R566	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R567	1-216-813-11	METAL CHIP	220	5%	1/16W
R569	1-216-864-11	METAL CHIP	0	5%	1/16W
R570	1-216-821-11	METAL CHIP	1K	5%	1/16W
		< VARIABLE RESISTOR >			
RV552	1-241-391-11	RES, ADJ, METAL GLAZE 470			
RV553	1-241-391-11	RES, ADJ, METAL GLAZE 470			
RV554	1-241-391-11	RES, ADJ, METAL GLAZE 470			
		< VIBRATOR >			
X501	1-767-846-21	VIBRATOR, CERAMIC 30MHz			
		MISCELLANEOUS			
		**********			
3	1-783-129-11	CABLE, FLEXIBLE FLAT			
14	1-783-128-11	CABLE, FLEXIBLE FLAT			
18	1-694-379-11	TERMINAL, BATTERY 3P			
60	1-694-378-11	TERMINAL, BATTERY 2P			
72	1-668-453-11	PWB, CONTROL FLEXIBLE			
		ACCESSORIES & PACKING MATERIALS			
		**********			
⚠	1-475-555-21	ADAPTOR, AC (UK)			
⚠	1-475-555-31	ADAPTOR, AC (AEP)			
	1-475-561-21	REMOTE COMMANDER			
	1-573-291-11	CONNECTOR, CONVERSION			
	1-759-634-11	INTERFACE CARD			
	1-783-028-11	CORD, CONNECTION			
	3-862-692-21	MANUAL, INSTRUCTION (ENGLISH)			
	3-862-692-31	MANUAL, INSTRUCTION (FRENCH) (AEP)			
	3-862-692-41	MANUAL, INSTRUCTION (GERMAN) (AEP)			
	9-980-978-11	BATTERY COVER			
	A-8044-807-A	DISK ASSY, FLOPPY (UK)			
	A-8044-967-A	DISK ASSY, FLOPPY (AEP)			

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Sony Corporation
Information Technology Company

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